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Bulletin
1996-98 Graduate Catalog

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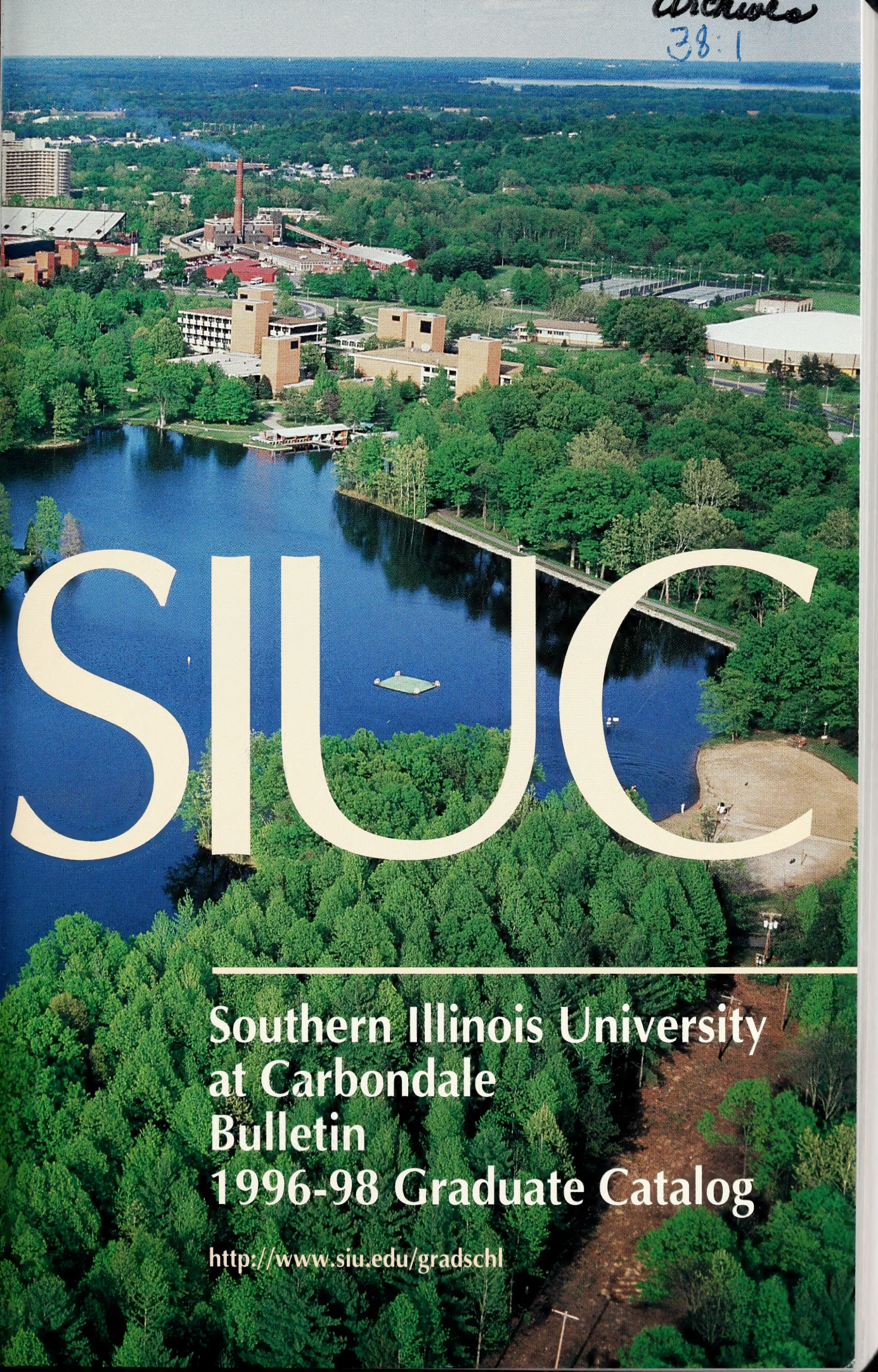
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This Catalog

The Graduate Catalog covers in detail questions concerning the graduate program of Southern Illinois University at Carbondale for the period from summer, 1996, through spring, 1998. It supersedes Volume 36, Number 1, of the *Southern Illinois University at Carbondale Bulletin*.

The following publications may be obtained free from University Electronic Communications, Southern Illinois University at Carbondale, Carbondale, Illinois 62901-6513.

Graduate Catalog

Undergraduate Catalog

School of Law Catalog

Schedule of Classes. Please specify term (fall, spring, or summer).

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Graduate School Phone: 618-536-7791, WWW: <http://www.siu.edu/gradschl>

SIUC complies fully with applicable federal and state nondiscrimination and equal opportunity laws, orders, and regulations in admission, employment, and access to University programs and activities. Complaints or requests for further information should be directed to the University Affirmative Action Office, Anthony Hall 104, 618-536-6618.

SIUC is committed to creating and maintaining a university community free from all forms of sexual harassment. Copies of the "Sexual Harassment Policy and Grievance Procedures" are available in the University Affirmative Action Office. Problems should be reported promptly to the University Ombudsman, Woody Hall C302 or to the University Affirmative Action Office, Anthony Hall 104.

This publication provides information about Southern Illinois University at Carbondale. Primary attention is given to its academic programs, rules and regulations, and procedures. Students will be subject to the published requirements in effect when they are admitted to the Graduate School. Students beginning graduate work during the period of time from the start of summer session 1996 through spring semester 1998 are subject to the academic requirements of the Graduate School as specified in this publication. These requirements may be superseded by future publications of the Graduate Catalog. If the requirements are subsequently changed, students may elect either to meet the requirements in force in their particular degree programs immediately prior to the change, or to meet the new requirements. If they elect the former option they shall be guaranteed a minimum period of time from the date that the program requirements were changed within which minimum period they will be permitted to complete the old degree requirements.

This minimum period shall be determined by the department or other degree-program unit, subject to the following two constraints. First, the minimum period prescribed by the department may not exceed the standard Graduate School limitation that credit applied toward fulfillment of requirements for the master's degree must have been earned within a six-year period preceding the completion of the degree, and that doctoral students must complete degree requirements within five years after admission to candidacy. Second, the minimum period shall encompass no less than two years for master's degree students and three years for doctoral students, with the exception that students in the last stage of their degree work when requirements change (a master's student who has completed all requirements except the thesis or research report and the final examination or a doctoral student who has been admitted to Ph.D. candidacy) shall not be subject to the new requirements but may complete their degrees within the standard Graduate School limitations stated above. Students who elect to follow old requirements, but do not complete their work within the minimum period prescribed by the department, shall, unless they were in the last stage of their degree work when requirements changed, be subject to requirements in force at the time they complete their degrees, and shall be subject to the standard Graduate School limitations described above. The University reserves the right to change information contained herein on matters other than curricular requirements without notice when circumstances warrant such action.

Board of Trustees and Officers of Administration

Board of Trustees of Southern Illinois University

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University Calendar

All breaks officially begin at 10:00 o'clock the night before, and end at 7:30 the morning after, the respective beginning and ending dates listed unless otherwise noted.

Summer Session 1996

Eight-Week Session Begins	Monday, June 10, 7:30 A.M.
Deadline to Apply for Graduation ...	Friday, June 14
Deadline to Drop an 8-Week Class and Receive a Refund	Friday, June 21
Independence Day Holiday	Thursday, July 4
Deadline to Drop an 8-Week Class :	Monday, July 8
Final Examinations	Thursday and Friday, August 1-2
Commencement	Saturday, August 3

Fall Semester 1996

Semester Classes Begin	Monday, August 19
Labor Day Holiday	Monday, September 2
Deadline to Apply for Graduation ...	Friday, September 20
Deadline to Drop a Class and Receive a Refund	Friday, August 30
Deadline to Drop a Class	Monday, October 14
Fall Recess	Thursday-Sunday, October 31- November 3
Thanksgiving Vacation	Noon Saturday-Sunday, November 23- December 1
Final Examinations	Monday-Friday, December 9-13

Spring Semester 1997

Semester Classes Begin	Monday, January 13
Martin Luther King, Jr.'s Birthday Holiday	Monday, January 20
Deadline to Apply for Graduation ...	Friday, January 17
Deadline to Drop a Class and Receive a Refund	Friday, January 24

Spring Semester 1997 (Continued)

Deadline to Drop a Class	Monday, March 17
Spring Vacation	Noon Saturday –Sunday, March 8–16
Final Examinations	Monday–Friday, May 5–9
Commencement	Friday–Sunday, May 9–11

Summer Session 1997

Eight-Week Session Begins	Monday, June 9, 7:30 A.M.
Deadline to Apply for Graduation ..	Friday, June 13
Deadline to Drop an 8-Week Class and Receive a Refund	Friday, June 20
Independence Day Holiday	Friday, July 4
Deadline to Drop an 8-Week Class ..	Monday, July 7
Final Examinations	Thursday and Friday, July 31–August 1
Commencement	Saturday, August 2

Fall Semester 1997

Semester Classes Begin	Monday, August 25
Labor Day Holiday	Monday, September 1
Deadline to Drop a Class and Receive a Refund	Friday, September 5
Deadline to Apply for Graduation ..	Friday, September 26
Deadline to Drop a Class	Monday, October 20
Fall Recess	Thursday–Sunday, October 30– November 2
Thanksgiving Vacation	Noon Saturday–Sunday, November 22–30
Final Examinations	Monday–Friday, December 15–19

Spring Semester 1998

Martin Luther King, Jr.'s Birthday Holiday	Monday, January 19
Semester Classes Begin	Tuesday, January 20
Deadline to Apply for Graduation ..	Friday, January 23
Deadline to Drop a Class and Receive a Refund	Friday, January 30
Deadline to Drop a Class	Monday, March 23
Spring Vacation	Noon Saturday–Sunday, March 14–22
Final Examinations	Monday–Friday, May 11–15
Commencement	Friday–Sunday, May 15–17

Excused Absences for Religious Holidays. Students absent from classes because of required observances of major religious holidays will be excused. It is the student's responsibility to notify in advance the instructor of each class that will be missed. Students must also take the responsibility for making up work missed.

Deans of Colleges and Schools

James M. McGuire, College of Agriculture, Agriculture Building
Thomas L. Keon, College of Business and Administration, Rehn Hall
Donald L. Beggs, College of Education, Wham Education Building
Juh Wah Chen, College of Engineering, Engineering Building
John H. Yopp, Graduate School, Woody Hall
Thomas Guernsey, School of Law, Lesar Law Building
John S. Jackson III, College of Liberal Arts, Faner Hall
Carolyn A. Snyder, Library Affairs, Morris Library
Carl J. Getto, School of Medicine, Wheeler Hall
Joe S. Foote, College of Mass Communication and Media Arts, Communications
Building
Jack Parker, College of Science, Neckers Building
Elaine M. Vitello, College of Technical Careers, Technical Careers Building

1 / The Graduate School

Southern Illinois University

Southern Illinois University has entered its second hundred years of teaching, research, and service. At the outset of the 1970's, Southern Illinois University became a single state system with two universities: Southern Illinois University at Carbondale and Southern Illinois University at Edwardsville. Southern Illinois University at Carbondale also has a medical school campus at Springfield.

Southern Illinois University at Carbondale (SIUC) first operated as a two-year normal school but in 1907 became a four-year, degree-granting institution. In 1943 SIUC was transformed from a teacher-training institution into a university, thus giving official recognition to the area's demand for diversified training and service. Graduate work was instituted in 1943, with the first doctoral degrees granted in 1959. There has been diversification and expansion of graduate programs across the University through the Colleges of Agriculture, Business and Administration, Education, Engineering, Liberal Arts, Mass Communication and Media Arts, and Science. In addition to expansion of programs within the Graduate School, professional schools were established in medicine, law, and social work.

In keeping with the state's master plan, the University's objective is to provide a comprehensive educational program meeting as many individual student needs as possible. While providing excellent instruction in a broad range of traditional programs, it also helps individual students design special programs when their interests are directed toward more individualized curricula. The University comprises a faculty and the facilities to offer general and professional training ranging from two-year associate degrees to doctoral programs, as well as certificate and non-degree programs meeting the needs of persons not interested in degree education.

Enrollment

In fall semester 1994, out of a total enrollment of 23,162, SIUC had 3,761 and 630 registered graduate and professional students respectively.

Location

Carbondale is approximately 100 miles southeast of St. Louis, Missouri. Immediately south of Carbondale begins some of the most rugged and picturesque terrain in Illinois. Sixty miles to the south is the historic confluence of the Ohio and Mississippi rivers, the two forming the border of the southern tip of Little Egypt, the fourteen southernmost counties in Illinois. Within ten miles of the campus are located two state parks and four recreational lakes and much of the area is a part of the 240,000 acre Shawnee National Forest.

Campus

The Carbondale campus, comprising more than 3,290 acres, has developed a 981 acre portion with woods and a lake as a site for its academic buildings and residence halls. The buildings are located in wooded tracts along two circular shaped campus drives, named for Lincoln and Douglas.

The Graduate School

WWW: <http://www.siu.edu/gradschl/>

The primary concerns of the Graduate School are graduate instruction and research. The Graduate School therefore plays an essential role in development of instructional and research programs, in acquisition of funds, and in procurement of facilities necessary to encourage and support research by members of its scholarly community. Through faculty, staff, and students the Graduate School makes its contribution to the public welfare of the region, state, nation, and international community.

The Graduate School offers master's degrees through fifty-nine programs and the doctoral degree through twenty-eight programs. Graduate students pursue advanced study and research under the leadership of a graduate faculty of over 1,000 members. In addition, the Schools of Law and Medicine provide graduate students with additional opportunities in instruction and research. The Graduate School administers programs in the Colleges of Agriculture, Business and Administration, Education, Engineering, Liberal Arts, Mass Communication and Media Arts, Science, Technical Careers, and the Schools of Law, Medicine, and Social Work.

Within these colleges and schools are departments whose distinguished faculty offer inspired teaching, conduct innovative research, and facilitate student services from admission to placement. The University has an excellent library and has a very good computing facility. For further information, see Academic Resources elsewhere in this chapter. In addition to the excellent research conducted in the colleges and schools, SIUC operates a number of research centers, most of which have been established with the aid of outside funding. These centers also are described under Academic Resources.

Graduate Degrees Offered

The Graduate School offers the master's, Master of Fine Arts, Doctor of Philosophy, Doctor of Rehabilitation, and Doctor of Business Administration degrees. In several of the programs listed below, one or more concentrations are available.

Master's Degrees

Master's degrees are available in the approved programs listed below:

Abbreviations: Master of Accountancy, M.Acc.; Master of Arts, M.A.; Master of Business Administration, M.B.A.; Master of Music, M.M.; Master of Public Administration, M.P.A.; Master of Science, M.S.; Master of Science in Education, M.S.Ed.; Master of Social Work, M.S.W.

Accountancy	M.Acc.	Agricultural Education and	
Information Systems		Mechanization	M.S.
Taxation		Animal Science	M.S.
Administration of Justice	M.A.	Anthropology	M.A.
Agribusiness Economics	M.S.	Applied Linguistics	M.A.
Agribusiness Economics		Behavior Analysis and Therapy	M.S.
Agricultural Services		Biological Sciences	M.S.

Business Administration	M.B.A.	Journalism	M.A., M.S.
Information Systems		Manufacturing Systems	M.S.
International Business		Mathematics	M.A., M.S.
Chemistry	M.S.	Mechanical Engineering	M.S.
Civil Engineering	M.S.	Microbiology	M.A.
Communication Disorders and		Mining Engineering	M.S.
Sciences	M.S.	Music	M.M.
Computer Science	M.S.	Music Education	
Curriculum and Instruction	M.S.Ed.	Music History and Literature	
Economics	M.A., M.S.	Music Theory and Composition	
Educational Administration	M.S.Ed.	Opera-Music Theater	
Educational Psychology	M.S.Ed.	Performance	
Counselor Education		Piano Pedagogy	
Educational Psychology		Pharmacology	M.S.
Electrical Engineering	M.S.	Philosophy	M.A.
English	M.A.	Physical Education	M.S.Ed.
Composition		Physics	M.S.
Creative Writing		Physiology	M.S.
Literature		Plant Biology	M.S.
Food and Nutrition	M.S.	Plant and Soil Science	M.S.
Foreign Languages and Literatures....	M.A.	Crop Science	
French		Horticultural Science	
Spanish		Soil Science	
Forestry	M.S.	Political Science	M.A.
Forest Resource Management		Psychology	M.A., M.S.
Outdoor Recreation Resource		Clinical	
Management		Counseling	
Wood Science and Technology		Experimental	
Geography	M.A., M.S.	Public Administration	M.P.A.
Physical Environmental		Recreation	M.S.Ed.
Systems		Rehabilitation Administration	
Resource Management		and Services	M.S.
Systems		Rehabilitation Counseling	M.S.
Urban and Regional Planning		Social Work	M.S.W.
Geology	M.S.	Sociology	M.A.
Health Education	M.S.Ed.	Special Education	M.S.Ed.
Higher Education	M.S.Ed.	Speech Communication	M.A., M.S.
College Student Personnel		Teaching English to Speakers of	
Community and Junior College		Other Languages	M.A.
Teaching		Telecommunications	M.A.
History	M.A.	Workforce Education and	
American		Development	M.S.Ed.
European		Zoology	M.S.
Latin American			

Master of Fine Arts Degree

Master of Fine Arts (M.F.A.) degree programs are available in the fields below:

Art	Theater
Cinema and Photography	

Doctoral Degrees

Doctor of Philosophy degree programs are available in the fields listed below along with the approved concentrations:

Anthropology	Engineering Science
Chemistry	English
Curriculum and	Geography
Instruction	Physical Environmental Systems
Economics	Resource Management Systems
Educational Administration	Geology
Educational Psychology	Health Education

Historical Studies
Journalism
Mathematics
Microbiology
Pharmacology
Philosophy
Physiology
Plant Biology
Political Science

Psychology
Clinical
Counseling
Experimental
Sociology
Special Education
Speech Communication
Workforce Education and Development
Zoology

The Doctor of Rehabilitation degree is offered in the area of rehabilitation.

The Doctor of Business Administration degree is offered in the area of business administration.

Student Responsibility

Students are responsible for knowing degree requirements and enrolling in courses that will enable them to complete their degree programs. It is also their responsibility to know the University regulations for the standard of work required to continue in the Graduate School. For information, consult both the general and specific degree requirements enclosed in this publication. Additional details about requirements and procedures are available from your graduate adviser or the Graduate School.

Human Subjects

Before the start of any research involving human subjects, the research project must be reviewed and approved by the SIUC Human Subjects Committee (an institutional review board). If your master's or doctoral project will involve human subjects (including administering questionnaires, conducting interviews, or accessing confidential databases), you must submit an application to the committee *prior* to the start of the research. When you submit your master's thesis/research paper or doctoral dissertation to the Graduate School, you must include Form A indicating that your project has been reviewed and approved by the committee. If this form is not included, your master's research paper/thesis or doctoral dissertation cannot be accepted by the Graduate School.

Animal Care

The SIUC Animal Care Committee was formed to establish and enforce ethical, humane guidelines for the use of live animals in research at the University. The committee reviews all protocols involving the use of vertebrate animals for training, research, and testing to assure compliance with humane standards and federal regulations. Researchers with projects involving animals must submit a completed *Animal Use Protocol* form for the committee's review. Approval of the protocol is required before the animals can be used for training, research, or testing purposes. For more information, contact the Animal Care Committee at 618-453-4556 or the Vivarium at 618-536-2346.

Handling Chemicals

Faculty, staff, and students conducting projects that involve hazardous biological materials (including recombinant DNA), radiological materials, or hazardous chemical materials must have prior approval and must comply with all relevant government regulations. SIUC's Center for Environmental Health and Safety (618-453-7180) monitors compliance and oversees the approval committees of Institutional Biosafety, Radiological Control, Hazardous Waste Oversight and Biological Safety Oversight.

Degree Requirements

The following section describes Graduate School regulations unique to the master's and the doctoral degrees. For Graduate School procedures and regulations applicable to all graduate students, regardless of degree program, the student should consult the section titled General Regulations and Procedures. For information about specific degree programs, the student should consult the departmental degree program description.

MASTER'S DEGREE PROGRAM

Requirements and admission policies for applicants to a master's degree program are elaborated on in the following paragraphs.

Admission

In order to be admitted to a degree program, an applicant must meet Graduate School admission requirements and be approved by the department or degree program concerned.

The Graduate School requires that the applicant hold a bachelor's degree from an accredited institution or have completed all undergraduate degree requirements prior to the beginning of the classes for the term for which admission is sought. The applicant must have earned a grade point average (GPA) of 2.70 or better ($A = 4.00$) on the last 60 semester hours of undergraduate coursework. Applicants to master's degree level study may begin the admissions process when they need no more than 32 semester hours beyond the credit shown on their transcript at the time of application to complete all requirements for the bachelor's degree.

An applicant who is a U.S. citizen or permanent resident and whose GPA is below 2.70 may be admitted as an unclassified student and may later apply to a degree program when 12 or more semester hours of graded graduate work at SIUC have been completed. A minimum GPA of 3.00 is required in courses for which grades of *A*, *B*, *C*, *D*, *F* have been assigned.

Any applicant who has completed 12 or more semester hours of graded graduate work at an accredited U.S. education institution, and who has a GPA of 3.00 or better on all graduate work, may be exempted from the 2.7 undergraduate grade point average requirement.

Any student with fewer than 12 hours of graduate work may be admitted to the Graduate School on the basis of undergraduate GPA only.

General Requirements

Graduate credit earned in graduate courses for which the student has received grades of *A*, *B*, *C*, or *S*, and only such credit, is acceptable for master's degree programs. At least 21 semester hours of graduate credit with grades of *A*, *B*, or *C* must be earned in courses graded *A* through *F*. An overall grade point average of at least 3.00 in all graduate work included in the master's degree program is required before that degree can be awarded.

The Graduate School requires a minimum of 30 semester hours of acceptable graduate credit for the master's degree. Since certain degree programs require more than 30 hours, the student should consult the description of the appropriate program for specific requirements. No more than half of the credit applied toward fulfillment of the master's degree requirements may be earned at other universities and transferred to SIUC.

At least nine hours of course work must be earned in courses taught on the Carbondale campus or in an approved residency center and at least nine hours of credit must be earned after admission to the degree program.

In addition, a minimum of fifteen hours in courses numbered 500 or above must be earned at SIUC.

Candidates for a master's degree are required to pass a comprehensive examination covering all of their graduate work, including the thesis. This examination may be written or oral, or both, as determined by the student's advisory committee.

Time Limits

A student has six calendar years to complete the degree. This time is calculated from initial enrollment to completion of all degree requirements including any document that must be approved by the Graduate School. This time limit includes courses taken either at SIUC or elsewhere. All students must remain registered until completion of their degrees. See section Continuing Enrollment Requirement.

Thesis

Each candidate for a master's degree shall write a thesis except where a graduate program has been approved to provide some other arrangement, such as a research paper. The thesis shall be supervised by a committee of at least three members of the graduate faculty and may be counted for not more than six nor less than three semester hours of credit.

Students who have completed all course work and have registered for the minimum number of thesis or research hours required for the degree are subject to the continuing registration requirement described in the section titled General Regulations and Procedures.

Two copies of the approved thesis must be presented to the Graduate School by the stated deadline date to be bound and shelved in the library. For nonthesis programs, a research paper should show evidence of the student's knowledge of research techniques and should be based on a special project or specific courses as may be recommended by the advisory committee. One copy of the research paper must be filed in the Graduate School by the stated deadline date.

Double Major for a Master's Degree

A student may earn a double major for a master's degree if such a program of graduate study is commensurate with the student's vocational and professional goals.

A student interested in pursuing a double major for a master's degree must submit to the graduate dean a written statement of justification for the proposed program and a program of study endorsed by the chairman of both of the cooperating units. The forms for submitting a double major program of study are available in the Graduate School office.

Requirements.

1. The student must have been admitted to one master's degree program.
2. Each unit in which the student wishes to earn a major must have an approved master's degree program.
3. The chairman of each unit must endorse the proposed program.
4. The proposed program must specify the title of the degree which is to be awarded.
5. The proposed program must be approved by the graduate dean.
6. At least 18 semester hours must be earned for each major, and one-half of the required course work for each major must be in courses numbered 500 or above.

7. The minimum number of hours required for the double major must total 60 per cent of the sum of the total required for the two majors individually.
8. The thesis may be counted for not more than a combined total of 6 nor less than 3 semester hours of credit.

Second Master's Degree

A student may earn a second master's degree if the second degree is offered by an academic unit different from that of the first master's degree. None of the hours used towards any previous degree will be allowed to count as a part of the total number of hours toward a second master's, and all regulations shall apply to the second master's degree exactly as they would if this were a first master's degree.

Concurrent Master's Degrees Program

A concurrent master's degrees program permits students to be enrolled at the same time in two academic departments which have an approved concurrent degrees arrangement with each other, and earn two master's degrees.

Academic departments, upon approval of the Graduate Council, may establish a concurrent degrees program. Concurrent master's degrees programs will only be approved if they can be shown to enhance graduate students' educational experiences and professional opportunities. Furthermore, concurrent degrees programs must meet the following requirements:

1. students must obtain admission to both academic departments, and must be formally admitted to the concurrent degrees program prior to completion of the master's degree requirements for either of the participating academic departments;
2. students are required to complete all core requirements of each master's program;
3. students are required to earn no less than 80 percent of the total number of semester hours required in the master's degree programs of each of the participating academic units.

Approved concurrent master's degrees programs are the M.A. in telecommunications and M.B.A., and the M.S. in agribusiness economics and M.B.A. Contact the Graduate School Admissions Office for details.

Summary of Master's Degree Requirements

- At least 30 hours of graduate credit, or the minimum number of hours required by the specific degree program.
- Grade point average of at least 3.00.
- At least 15 hours in courses numbered 500 or above, which must be completed at SIUC.
- At least 9 hours after admission to the degree program.
- At least 9 hours taught on the Carbondale campus or in an approved residency center.
- At least 21 hours of graduate course work graded A, B, or C.
- At least one-half of the required number of hours earned at SIUC.
- Courses to be applied to the degree taken within six years of conferring the degree.
- Transfer credit taken at another institution or as an unclassified student approved by the dean of the Graduate School.
- Two copies of an approved thesis or one copy of an approved research paper turned in to the Graduate School (not applicable for M.B.A., M.Acc., or M.S.W. programs).
- Comprehensive or oral examination.
- Submission of departmental clearance form.
- Register for 601 Continuing Enrollment.

DOCTORAL DEGREE PROGRAM

All Graduate School requirements for the Doctor of Philosophy degree also apply to other doctoral degree programs under the jurisdiction of the Graduate School.

Admission

Admission to a doctoral program in the Graduate School normally requires a master's degree or its equivalent, a grade point average in graduate work of at least 3.25, and acceptance by the academic unit offering the doctoral program. Faculty of a degree program-unit may add its own grade point average requirements (above the Graduate School minima) for admission to that particular program. Direct post-baccalaureate degree entry is possible upon recommendation of the department and acceptance by the Graduate School. An applicant to doctoral level study may begin the admission process when the applicant needs no more than 16 additional semester hours (24 quarter hours) beyond the credits shown on the transcript at the time of application to complete all requirements for the master's degree. The graduate dean informs each student of any conditions for admission imposed by the Graduate School or by the academic unit.

Accelerated Entry into a Doctoral Program

Applicants with exceptional research potential or outstanding academic preparation may have the option to enter a doctoral program after one semester as a master's level student. Not all departments participate in the accelerated entry option; therefore, the interested applicant should contact the appropriate department.

The student initially must be admitted into a master's level program. After at least one semester and evidence that the applicant is prepared to begin research at the doctoral level and meets other departmental criteria for accelerated entry, the department may recommend admission directly into the doctoral program. The student must also meet the doctoral admission requirements including the minimum 3.25 grade point average for all graduate work.

It should be noted that course work to be applied toward residency does not begin until after admission into the doctoral program.

General Requirements

The doctoral degree is awarded for high accomplishment in a particular discipline or a recognized interdisciplinary area, as measured by the student's ability to pass the preliminary examination for admission to candidacy, meet the research tool requirement of the program, perform a piece of original research, present the results in proper form in a dissertation, and defend the dissertation before a faculty committee. Except for the hours required to meet residency, there is no Graduate School requirement that a certain number of semester hours be taken for the doctorate although some degree programs do require a certain number of semester hours. Graduate work completed at another institution may be eligible for transfer to the student's doctoral program, subject to Graduate School regulations regarding transfer of credit and acceptance by the student's major department.

No doctoral level residence-credit program may be established off campus, although course work involved in a doctoral program may be taken at an off-campus residence center provided that the full, normal requirement of residence on campus at SIUC is met under the usual Graduate School standards for doctoral programs.

Preliminary Examination

The student will generally prepare for this examination through independent study and course work, as advised by the faculty of the doctoral program. The examination is given to determine the breadth and depth of the student's knowledge within the discipline. The particular form and content of the examination are determined by the faculty of each of the doctoral programs. The student will be permitted to take the preliminary examination at the discretion of the department, after having completed two years of full-time study or its equivalent beyond the baccalaureate.

Research Tool Requirement

The doctorate at SIUC is a research-oriented degree. The research tool requirement is intended to be an integral part of the student's program. Since research materials, problems, and techniques vary from discipline to discipline, the details of the research tool requirement are determined by the faculty of each of the doctoral programs.

Residency

The residency requirement for the doctorate must be fulfilled after admission to the doctoral program and before formal admission to doctoral candidacy. The residency requirement is satisfied by completion of 24 semester hours of graduate credit on campus as a doctoral student within a period not to exceed four calendar years. No more than six hours of deferred dissertation credit may be applied toward fulfillment of the 24 semester hours residency requirement. No doctoral student will be permitted to sign up for more than six hours of dissertation until candidacy has been achieved. Any dissertation hours registered for above the six permitted prior to candidacy will not be counted toward completion of the doctoral degree. Credit earned in concentrated courses or workshops may apply toward fulfillment of the residency requirements if the student is concurrently registered for a course spanning the full term. No more than six semester hours of short course or workshop credit may be applied to the 24 semester hours residency requirement.

Admission to Candidacy

Admission to candidacy is granted by the dean of the Graduate School upon recommendation of the faculty responsible for the student's program, after the student has fulfilled the residency requirement for the doctoral degree, passed the preliminary examination, and met the research tool requirement of the program. The doctoral degree may not be conferred less than six months after admission to candidacy, except upon approval of the dean of the Graduate School. The candidate must fulfill all requirements for the degree within a five-year period after admission to candidacy. If completion of requirements is delayed beyond five years, a student may be required to take another preliminary examination and be admitted to candidacy a second time. All candidates must remain registered until completion of their degree. See section Continuing Enrollment Requirement.

Dissertation

After being admitted to candidacy, the student must complete a dissertation showing that the student is capable of independent research or other creative effort. A successful dissertation usually represents the most extensive and intensive scholarly work the student has performed to date. Completing the dissertation will lead the student up to the cutting edge of research (however defined by the discipline) conducted at that time in his or her field of research. A dissertation must address a significant question and demonstrate that its author can in-

interpret findings and formulate conclusions that are the result of independent thinking and sustained evaluation of source materials. These findings must be expressed in clear and grammatical language that is well organized into cogent and coherent argument. The dissertation shall be supervised by a faculty committee which has been approved by the dean of the Graduate School. Unless the graduate dean has approved an exception requested by the student's academic unit this committee shall consist of five graduate faculty members, at least one of whom shall be from a graduate program outside the student's academic unit. The student's academic unit shall be understood to mean the department (or equivalent units) and any member outside the department is eligible to serve as the outside member providing that the department and the graduate dean agree.

While working on the dissertation, the student must register for the course numbered 600. The student is to devote at least one academic year of full-time work to complete the dissertation and will register for 24 semester hours of dissertation credit, for example, 12 hours for each of two terms.

Students who have registered for 24 semester hours of dissertation credit and have not completed the doctoral dissertation are subject to the continuing enrollment requirement described in the section titled General Regulations and Procedures.

Publication of the doctoral dissertation to insure its availability to the scholarly community is considered an integral part of the process of doctoral education. Students must have their dissertations microfilmed by University Microfilms. An abstract of the dissertation will be published in *Dissertation Abstracts International*.

The student must submit two copies of the dissertation acceptable to the Graduate School, along with an abstract of 350 words or less. All dissertations will be microfilmed. There is a fee of \$60.00 to cover the cost of publication of the abstract and microfilming of the dissertation. If copyright is desired, an additional fee of \$35.00 will be required. The microfilming agreement form and the survey form of earned doctorates are completed in the office of the Graduate School at the time the dissertation is submitted.

The abstract will be published in the current *Dissertation Abstracts International* and the dissertation will be cited in *American Doctoral Dissertations* and *Comprehensive Dissertation Index*. A copy of the microfilmed dissertation will be placed in the Library of Congress archives. This service assures the student that the dissertation will be available to other researchers at no further personal expense to the student.

If the student elects to use the copyright service, copyright will be obtained in the student's name. Publication rights, other than for reproduction in microform or from microform, are the student's to assign to any publisher at any time. In addition, arrangements can sometimes be made for University Microfilms to publish a small edition of the dissertation.

Final Examination

There will be a final oral examination administered by the student's doctoral dissertation committee. The examination will cover the subject of the dissertation and other matters related to the discipline. Any member of the graduate faculty may attend the final oral examination and may participate in questioning and discussion, subject to reasonable limitations imposed by the chairperson of the committee, but only members of the committee may vote or make recommendations concerning acceptance of the dissertation and final examination. A student will be recommended for the degree only if the members of the committee, with at most one exception, judge both the dissertation and the performance at the final oral examination to be satisfactory. In cases where a committee of

more than five members has been approved, the requirement of not more than one negative vote will still apply.

Interdisciplinary Doctor of Philosophy Programs

These guidelines provide for interdisciplinary doctoral programs for a limited number of students whose educational requirements can be met by existing resources, but not exclusively by any one of the University's constituent units. Interdisciplinary doctoral programs will be instituted in response to the particular academic interest of individual students, not as programs of a permanent nature. The procedures and criteria given below govern the authorization and control of interdisciplinary doctoral programs.

1. After admission to an established doctoral program at SIUC and upon the recommendation of the chairperson or adviser of that program, a student may apply for an interdisciplinary doctoral program to the dean of the Graduate School.
2. The dean of the Graduate School will apply the following criteria in deciding whether a program committee should be established to consider the proposed interdisciplinary doctoral program.
 - a. The requisite staff must be available.
 - b. The library holdings must be adequate without unreasonable additions.
 - c. The program must lie within the recognized disciplines or fields of study, at least one of which offers the doctoral program.
3. If the dean of the Graduate School is satisfied that the proposed program satisfies these criteria, the dean shall form a special program committee of five members, at least three of whom shall be from units offering the doctorate.
4. If the committee approves the proposed program, a plan of study shall be developed that includes the following elements:
 - a. Fields or areas of study
 - b. Required courses
 - c. Languages or other research tool requirements
 - d. Dissertation subject
 - e. Preliminary examination
5. The program as approved by the committee and accepted for principal sponsorship by a unit with an approved doctoral program shall be submitted to the dean of the Graduate School. Upon final approval the student's program shall have the same binding effect upon the Graduate School as programs printed in the graduate catalog. The degree earned shall carry the title of the doctoral unit that has assumed principal sponsorship. The commencement program shall give specific indication that the degree is interdisciplinary and include a listing of those units that are substantively involved in addition to the principal sponsoring unit, as determined by the graduate dean.
6. When the committee has certified all the required performances, including the results of examinations, the committee shall be dissolved.

Summary of Doctoral Degree Requirements

- Achievement of a grade point average of at least 3.00.
- Completion of any specific courses required by the doctoral program.
- Fulfillment of the residency requirement.
- Completion of the research tool required by the doctoral program.
- Passing of the preliminary examination.
- Admission to candidacy.
- Completion of an approved dissertation with 24 hours of dissertation credit.
- Oral defense of dissertation.

- Submission of two approved copies of the dissertation to the Graduate School.
- Payment of \$60.00 microfilming fee.
- Completion of microfilm agreement and survey of earned doctorates at the Graduate School office.
- Degree conferred not less than six months nor more than five years after admission to candidacy.
- Submission of departmental clearance form.
- Register for 601 Continuing Enrollment.

General Regulations and Procedures

This section includes Graduate School procedures and regulations applicable to all graduate students regardless of degree classification. Requirements unique to the master's and doctoral degrees are stated in the section titled Degree Requirements. For information about specific degree programs the student should consult the appropriate degree program description. Requirements unique to the nondegree classifications are stated in the section in this chapter titled Unclassified Students—Non-Degree.

APPLICATION FOR GRADUATE STUDY

Students interested in admission to degree programs should contact appropriate departments directly to obtain official Graduate School application forms and other departmental materials. Students interested in unclassified (non-degree program affiliated) status, should contact the Graduate School directly to obtain application materials. In addition, students should carefully read directions obtained from departments on where to send official transcripts. Regardless of where the official transcripts are eventually sent, such transcripts must be forwarded directly from the registrar of previously attended schools (other than SIUC).

Application Fee

The Graduate School has a \$20.00 non-refundable application fee for unclassified graduate students. In addition, most programs require a non-refundable application fee of \$20.00 which must be submitted with the Application for Admission to Graduate Study. Refer to the specific programs for application fee information.

Transcripts

Students must have the registrar of each college previously attended (except SIUC) send an official transcript of the student record to either the Graduate School or the degree program director (check departmental procedures). Students applying for unclassified (non-degree status) must have the registrar of the degree-granting institution send one official transcript indicating the receipt of the bachelor's (or higher) degree to the Graduate School. Transcripts from institutions where the student received neither a degree nor enrolled for more than 12 semester hours of undergraduate credit are not required, provided that the grades obtained at such institutions are recorded upon the transcript of the college which granted the student's degree. Transcripts submitted directly by students are not acceptable. Transcripts and other admission credentials will not be returned nor forwarded to other institutions.

In accord with the Family Education Rights and Privacy Act of 1974, no non-Southern Illinois University at Carbondale person, firm, or agency may have access to an applicant's or a student's credentials without written consent of the

individual concerned. Graduate students shall be permitted to examine their own records upon request. Such requests should be made by the student to the dean of the Graduate School.

Test Scores

The Graduate School does not require the Graduate Record Exam (GRE); however, various departments may require, at their discretion, the GMAT, GRE, MAT, or other appropriate standardized tests for admission. Refer to the departmental program description or contact the department for specific information.

Deadlines

In order to be fully admitted to a degree program at the beginning of the academic term, an applicant should see to it that all required admissions materials are submitted no later than 90 days prior to the beginning of the term for which the applicant is seeking admission.

Admission is for the term indicated and a student who does not enroll in courses for that term will be required to update the application by a request to the Graduate School. The petition to update can only be granted within one calendar year of the initial admission term and only with the agreement of the department and the Graduate School. After one year, the student must be readmitted through the regular admission process.

If the term for which the applicant is applying is more than two years after the term of original admission, a student applying to a degree program must have the registrar of all institutions previously attended furnish official transcripts. An unclassified, nondegree student must have the registrar of the bachelor's degree-granting institution furnish one official transcript. If a student is applying to a degree program and has taken any course work at another institution between the first admission and the first registration, the applicant must have the registrar of the appropriate institutions furnish official transcripts of this work regardless of the amount of time elapsed.

Requirements

The admission requirements of the Graduate School and the department must both be met before the student is admitted to a degree program, and both the Graduate School and the department may specify conditions. Most departments require additional materials such as letters of recommendation and these should be forwarded directly to the applicant's major department. The student will be informed by the Graduate School of the resultant admission status after this process has been completed.

Admission of Faculty Members

No one who holds a faculty appointment at any of the academic ranks—lecturer, instructor, assistant professor, associate professor, and professor—shall be admitted to a graduate degree program at any level, or be eligible to register for courses to be taken for graduate credit, in the graduate degree program in which the faculty member holds the appointment. If a faculty member has been admitted to a graduate degree program in some unit other than the one in which such appointment exists, no member of the faculty of the unit in which the appointment is held may be a member of that colleague's thesis committee, graduate program committee, dissertation committee, or any other examining committee. (See also faculty appointments in the section titled Financial Assistance.)

Admission of International Students

This school is authorized under federal law to enroll non-immigrant alien students. A student from abroad is subject to all requirements for admission estab-

lished by the Graduate School. In addition, the applicant must complete special forms pertaining to the admission of international students. For these admission forms and for other information concerning international students, inquiries should be sent to the Graduate School.

To allow ample time for visa and other departure procedures, the applicant should have an application and all supporting documents on file with the University no less than four months prior to the proposed entry date.

International students must be enrolled in a program leading to a graduate degree. They cannot be admitted as unclassified students.

If the above requirements are satisfactorily met and the student is admitted to a degree program, the applicant will be required to certify that personally adequate financial resources will be available to undertake and continue in a program of study.

Test of English as a foreign language (TOEFL). All applicants whose native or first language is not English must take the TOEFL test no more than 24 months prior to the term for which the applicant is seeking admission. A minimum TOEFL score of 550 is required for Graduate School admission; higher scores may be required for admission into specific degree programs.

Exemptions to the TOEFL requirement are: (1) an applicant who has completed a bachelor's degree (four years attendance and completion of at least 100 semester hours of course work) at an accredited institution in the United States; (2) an applicant who has completed a master's degree at an accredited institution in the United States, who obtained a TOEFL score of at least 550 prior to beginning graduate studies and who has been in residence in the United States continuously prior to application to SIUC. Verification of the earlier TOEFL score by the degree granting institution is mandatory.

Academic Requirements. If a foreign-born applicant has completed a four-year bachelor's degree program at an accredited institution in the United States of America, the applicant may be given the same consideration for admission to a graduate degree program as a United States citizen, in regard to both academic requirements and the use of English as a foreign language.

Applicants who have completed the equivalent of a four-year bachelor's degree at a recognized institution in any other country must have an academic record equivalent to a 2.70 grade point average ($A = 4.00$) for admission to a master's degree program.

The determination of the applicant's grade point average shall be the responsibility of the Graduate School.

Applicants for doctoral programs must meet the regular academic requirements for admission to a doctoral program.

Qualification for Assistantship with Teaching Duties. Every non-native English speaker assigned a graduate assistantship with teaching duties must pass an examination of oral English skill before undertaking classroom duties. A representative of the appointing department and of the Graduate School must participate in the examination.

REGISTRATION

Only those students who have been officially admitted by the Graduate School will be permitted to register.

Some degree programs require their students to have an advisor's signature before registration. Please consult the designated major department about advisement. Unclassified nondegree students are their own advisors and may begin registration for the admitted semester after the registration period begins.

The schedule of classes for a particular semester is available from the Registration Center at the Graduate School.

Students are strongly encouraged to complete their registration before the beginning of classes. After the beginning of the term, the student must have the approval of the Graduate School to register late and may be required to pay a late registration fee. In addition, after the first week of classes, registration or program changes involving adding a course must have the written approval of the instructor of each course as well as the approval of the Graduate School. The Graduate School registration deadline is the end of the third week of each semester.

Information concerning registration dates and deadlines for the first time the student attends the University will be sent when the student is admitted to the Graduate School. Continuing students should consult the *Schedule of Classes* for each semester to find deadlines and dates for registration.

Registration Methods

During the advance registration period (see registration calendar for dates in the *Schedule of Classes*) graduate students may register by several methods described below. Unclassified students may use any of the methods. Degree-seeking students may be required by their departments to have an advisor's signature and thus are limited to the options of Mail Registration or in person at the Graduate School.

MAIL REGISTRATION

Unclassified graduate students may mail in a course request form. Degree-seeking students should contact their graduate advisor to sign the Course Request Form as a prerequisite to the process. Mail to Graduate Registration, Graduate School, Southern Illinois University, Carbondale, IL 62901-4716.

PHONE REGISTRATION

Unclassified students may phone in their registration during office hours and during the advance registration period. Degree-seeking students whose departments do not require an advisor's signature may also phone in their registration. The telephone number is 618-453-2969.

TOUCH TONE REGISTRATION

By calling 618-453-7482, unclassified students and permitted degree-seeking students may call UniLink during the hours of 7:15 A.M. to 7:50 P.M., Monday through Friday, to register for classes or to add/drop. To begin the registration, a student needs a touch-tone telephone, a PIN (DD/YY of birth) and the 5-digit call number assigned to each class section. If you are not yet admitted to the Graduate School or do not have department approval to register or there is some other problem situation, the computer states that you are ineligible to register.

REGISTRATION AT THE GRADUATE SCHOOL

The Graduate Registration Center is located at Woody Hall B104. All students may register in person from 8:00 A.M. to 4:30 P.M., Monday through Friday. After the first week of classes, students are required to have the graduate dean's permission to add courses and must come to the center to process a registration or add. After the second week of classes, all registration and changes must be processed at the center. The Graduate School registration deadline is the end of the third week of each semester.

LATE REGISTRATION

A late registration fee of \$15 shall be assessed to all students taking on-campus classes who register after the designated registration period. This fee shall be

nonrefundable and nonwaiverable, except when it is clearly shown that the late registration was caused by faculty or administrative action. Off-campus classes and registration in 599, 600, and 601 shall be exempt from such fee.

Withdrawal from Courses and from the University

DROPPING COURSES

Students officially registered for courses must withdraw formally. They must process an official withdrawal form. Outlined below are the procedures to be followed by graduate students when withdrawing from courses.

DEADLINES FOR DROPPING FROM A COURSE(S)

If Classes Meet for	*Deadline for Drop to Receive Refund	Deadline to Drop
13-16 weeks	2nd week	8th week
9-12 weeks	2nd week	6th week
8 weeks	2nd week	4th week
7 weeks	1st week	4th week
4-6 weeks	1st week	3rd week
2 or 3 weeks	1st day	1st week
less than 2 weeks	1st day	2nd day

*Students must drop a course or withdraw from the University by these deadlines to receive an account credit equal to a full refund of tuition and fees. Students who drop courses after the full refund deadline but remain enrolled in the University will not receive any refund. Students who withdraw from the University after the full refund period will receive an account credit equal to a pro-rata refund of tuition and fees through 60 percent of the duration of the enrollment period. An administrative fee will be assessed to all students who withdraw from the University and receive a pro-rata refund. The amount of the fee will be the lesser of 5 percent of all assessed charges, or \$100.

Students officially withdraw from courses through the program change process. This process starts with the academic adviser and is completed at the Registration Center. Graduate students may drop from a course through the 8th week of the fall and spring semesters. Drop deadlines for shorter sessions are correspondingly earlier (see schedule above). Official withdrawals during the first two weeks of the semester result in no entry being made on the student's record. Official withdrawals after the second week but prior to the 8th week of classes will result in the course listed on the student's record with the symbol W and the week of withdrawal. No drop from a course will be authorized after the 8th week of classes. It is the student's responsibility to insure that the drop process is officially completed.

WITHDRAWAL FROM THE UNIVERSITY

A complete withdrawal from the University may be authorized by the graduate dean through the Friday before the last week of classes. Students who withdraw from all classes will have a statement of withdrawal from the University and the week of withdrawal entered on their records. Students who find it necessary to withdraw from the University after school has started and who are on campus should contact the Graduate School in person to initiate the withdrawal process. If they are unable to come to campus, they may write the Graduate School asking that it process a withdrawal.

Students who advance register, including the paying of tuition and fees, and then find they cannot attend school must process an official withdrawal the same as do those who withdraw after school starts. In this case the process is the same as outlined in the paragraph above. Students who advance register but do not clear tuition and fees by the announced deadline date have their registrations cancelled by the University. Students who have deferred payment of tui-

tion and fees must officially withdraw if they stop attending classes; the failure to pay deferred fees by the deadline date does not cancel one's registration nor remove the obligation to pay the deferred fees.

Refer to the section titled Payment and Refunding of Tuition and Fees in this chapter for information about the refunding of tuition and fees when withdrawing from the University. Refer to that section, also, relative to special considerations extended to students withdrawing from school for extended military service.

Graduate Student Course Loads

FINANCIAL AID AWARDS

For financial aid *awarding* purposes, the following defines the number of semester hours for full-and half-time:

Status	16-Week Semester	8-Week Session
Full-time	12	6
Half-time	6	3

Graduate students enrolled in fewer than 6 hours for fall and spring semesters or 3 hours for summer session are not eligible to *obtain* student loans.

ENROLLMENT CERTIFICATION

The following semester hours of credit are to be used to certify full-time and half-time attendance of graduate students.

Status	16-Week Semester	8-Week Session
Full-time	9 or more hours*	3 or more hours
Half-time	6 hours	3 hours
Less than half-time...	Less than 6 hours	Less than 3 hours

* Students who hold at least a quarter-time (25% FTE) graduate assistantship are considered as full-time if they have a minimum of 6 semester hours.

MINIMUM AND MAXIMUM COURSE LOADS

Maximum course work for graduate students is 16 hours each semester; 12 hours is considered normal load. The minimum and maximum loads for graduate students under various types of financial support are summarized below. To meet the minima below, a graduate student must enroll in a graduate-level course (typically a 400-or 500-level course; certain 400-level courses are not available for graduate credit). Audit work will not qualify to meet the minimum load. However, audit work is calculated in determining a student's maximum course load. Exceptions to these minima and maxima are possible only with the written permission of the graduate dean. If graduate students' enrollments exceed the maximum or fail to meet the minimum of hours required by their type of financial support, their registrations will be withdrawn and financial support will be terminated.

Type of Financial Support	16-Week Semester		8-Week Session	
	Max.	Min.	Max.	Min.
No financial support	16		9	
Graduate Assistantships				
1/2 time appointment	12	6	6	3
1/4 time appointment	14	6	9	3
Full-time University employees	8		6	
Graduate Fellowships	16	9	9	3
Full Veteran's Benefits	16	9	9	3
SIUC Scholarships	16	9	9	3

All University employees who wish to use the employee tuition and fee waiver (civil service and faculty) and are classified as graduate students must seek ap-

proval of the Graduate School to enroll in more than 8 semester hours of courses.

Continuing Enrollment Requirement

Students who have not completed all degree requirements but who have previously enrolled for the minimum number of research, thesis, or dissertation credit hours required of the degree, must enroll every semester for at least one hour until all degree requirements have been completed. Summer sessions are exempted from the continuous enrollment requirement. Any graduate student who is not enrolled continuously as described above and who subsequently completes degree requirements, must have the permission of the graduate dean to graduate. Such permission will be contingent upon payment of the tuition and fees that would have been paid if the student had enrolled continuously each semester.

Continuing Enrollment—601. This course is offered by each graduate degree program for students who have previously registered for the minimum number of research, thesis, or dissertation credit required of the degree. Registration in 601 (1 hour per semester) is required of all graduate students, whether in residence or not, who are not otherwise enrolled. Concurrent registration in any other course is not permitted.

Students registering for 601 are assessed only tuition and the Student Center Fee for the credit hours associated with the registration. Since none of the other student fees are assessed for 601, the student is not eligible for the benefits of any other programs such as Recreation Center use, Health Service and Student Medical Benefits, Students' Attorney Program assistance, etc. Students needing the above benefits that require fees may instead register for additional research, thesis, or dissertation hours.

School of Law Courses

A graduate student may enroll for graduate credit in designated law courses if the student has permission of the dean of the School of Law and the dean of the Graduate School. Registration must be processed through the Graduate School and the grades will be reported on the Graduate School letter-grade system (A, B, C, etc.).

A law student may register for law credit in graduate courses with approval of the dean of the School of Law and the graduate dean. Registration must be processed on School of Law forms and the grades will be reported on the Graduate School letter-grade system.

A law student may not register for graduate courses for graduate credit unless the student has been admitted to the Graduate School in an approved concurrent program.

ADDITIONAL INFORMATION

Residence-Center Credit

Credit earned at approved graduate residence centers and credit earned in off-campus courses for which graduate credit has been approved will be entered on a student's record as on-campus credit earned at SIUC.

Students enrolled for credit in approved residence-center master's degree programs or in specific residence-credit courses must have been officially admitted (either in a degree program or unclassified) to the Graduate School at SIUC.

For information about specific programs and courses, the student should consult the appropriate department.

Transfer Credit

All graduate credits earned by a student in good standing at an accredited university, which have not been applied toward fulfillment of requirements for another degree, are eligible for transfer to that student's degree program, subject to general limitations of Graduate School regulations, to residency requirements for doctoral degree programs, and to acceptance by the student's major department. All transfer credits are subject to final review by the graduate dean. No transfer credit will be given for work bearing a grade below *B* without express permission of the graduate dean in response to written petition from the student's department. No credit toward a degree may be earned by correspondence nor in extension courses at another university. In the case of a master's degree, the student must earn at least half of the credit applied toward fulfillment of degree requirements in courses offered by SIUC.

The department recommending the graduate degree shall administer all required general and final examinations, and a member of the graduate faculty at SIUC shall direct the student's master's thesis, required research paper, or doctoral dissertation.

Graduate Grading System

- A Excellent. 4 grade points.
- B Good. 3 grade points.
- C Conditional, not fully satisfactory. 2 grade points.
- D Poor, not satisfactory. 1 grade point.
- F Failure. 0 grade points.
- S Satisfactory. Used for thesis and dissertation credit and certain designated and approved 500-level research, internship, and practicum courses. Is not counted in calculating grade-point average.
- U Unsatisfactory. Used for thesis and dissertation credit and certain designated and approved 500-level research, internship, and practicum courses. Is not counted in calculating grade-point average.
- W Authorized withdrawal made through a program change. Work may not be completed. Refer to grade explanation below.
- INC Incomplete. Has permission of the instructor to be completed within a period of time designated by the instructor. Refer to grade explanation below.
- DEF Deferred. Used only for certain designated and approved 500-level courses of an individual continuing nature such as research, thesis, or dissertation. Refer to grade explanation below.
- AU Audit. No grade or credit earned. Refer to grade explanation below.

GRADING SYSTEM EXPLANATION

Only courses for which the grades of *A*, *B*, *C*, or *S* have been received are acceptable in fulfillment of graduate degree requirements. The letter grades *A*, *B*, *C*, *D*, and *F* are included in computing the grade-point averages for academic retention. If a graduate student repeats a course with the permission of the graduate dean, both grades will be counted in the grade-point average. Graduate students will not receive graduate credit for Pass/Fail grades. They may not receive a grade of Pass/Fail in a 400-level course graded Pass/Fail on an elective basis.

400-level courses. Most 400-level courses may be taken for graduate credit. The Graduate Catalog will indicate those 400-level courses which may not be taken for graduate credit. No grades of Pass/Fail may be given for a 400-level course for graduate credit. The instructor in a 400-level course which can be taken for graduate credit has the discretion to decide whether to require additional work for graduate credit.

Withdrawal. A *W* indicates authorized withdrawal from a course prior to the date indicated in the schedule of classes for the term in which the course was taken. The student's record will reflect the courses from which the student had withdrawn with the symbol *W* and the week of withdrawal. Program changes to drop a course during the first two weeks of classes result in no entry being made on the student's record (consult the section entitled *Withdrawal from Courses* and from the University for additional information on withdrawal procedures and deadlines).

Incomplete. An *INC* is assigned when, for reasons beyond their control, students engaged in passing work are unable to complete all class assignments. An *INC* must be changed to a completed grade within a time period designated by the instructor. *INC* is not included in grade-point computation.

To complete the work from the original registration, a student should not register for the course again, but should complete the work for the original registration if the original registration is within the normal time limits established for the degree.

Deferred. When the work is completed in a course for which *DEF* has been assigned, the grade is changed to a letter grade by the instructor, except in the case of theses and dissertations. When a thesis or dissertation has been submitted to the Graduate School as approved, the grade is automatically changed to *S*. If a thesis or dissertation is found unacceptable and the student is dismissed from the program, the grade of *U* is automatically assigned upon receipt by the Graduate School of the action dismissing the student.

Audit. A student registering for a course on an audit basis receives no letter grade and no credit hours. The student's registration must indicate audit registration and the same fees are paid as when registering for credit. During the first three weeks of a regular semester a student registered for a course for credit may change to audit status or vice versa through the official program change process. Thereafter, the change may not be made.

Changing of grades. At the completion of a course the final grade assigned to a student is the responsibility of the instructor of the course. Grades given at the end of the course are final and may not be changed by additional work or by submitting additional materials; however, clerical errors in recording grades can be corrected. To correct a clerical error, the assigned instructors should submit a grade change card together with an explanation and justification of the grade change for the approval or disapproval of the department chair, the appropriate college dean, and the dean of the Graduate School. In cases of theses and dissertations, for which *DEF* grades are given, the Graduate School changes the *DEF* grades upon presentation and acceptance of the thesis and dissertation and receipt of the departmental approval papers. In courses for which *INC* and *DEF* grades have been given, the assigned instructors has the responsibility of determining the final grade to be assigned and notifying the Office of Admissions and Records of the final grade by means of the grade change card.

Financial Assistance

Financial assistance is available to qualified students in all fields of study in the form of (1) graduate assistantships where one serves as a classroom teacher or assistant, as a research assistant, or as an administrative assistant, (2) fellowships or traineeships, (3) scholarships, (4) federal work-study programs, and (5) loans. There are basic regulations that relate to these awards. Students should

make application for the graduate assistantships, fellowships, or traineeships through the department to which they have been admitted. Information and application forms for the tuition scholarship program may be obtained from the Graduate School office. Information regarding the federal work-study program and loans may be obtained by contacting the Financial Aid Office.

Students should be sure that their applications for admission are complete including the submission of required transcripts to the Graduate School to assure consideration for an award.

Graduate assistant appointments, graduate fellowships, and most traineeships include a tuition scholarship, but fees must be paid by the student. A student may receive no more than two calendar years of graduate-student support while a master's level student. A student may receive no more than four calendar years of graduate-student support while a doctoral-level student. The maximum number of years of graduate-student support for students seeking any combination of graduate degrees is six (72 months) unless a specific exception based on the student's programmatic needs is granted by the graduate dean. These time limits apply to assistantships, fellowships, traineeships, and other similar awards and appointments administered by the University, regardless of source of funds. Students who are awarded graduate assistantships, fellowships, or traineeships, but who have not furnished official proof of their most recent degree to the Graduate School shall be considered to be on term appointment for one semester only. No one will be appointed to a second term until an official transcript indicating receipt of the degree is received in the Graduate School.

Acceptance of an offer of financial aid (such as a fellowship, traineeship, or assistantship) for the next academic year by an actual or prospective graduate student completes an agreement which both student and graduate school expect to honor. In those instances in which the student accepts the offer before April 15 and subsequently desires to withdraw, the student may submit in writing a resignation of the appointment at any time through April 15. However, an acceptance given or left in force after April 15 commits the student not to accept another offer from another institution without first obtaining a written release from the institution to which a commitment has been made. Similarly, an offer by an institution after April 15 is conditional on presentation by the student of the written release from any previously accepted offer.

Graduate Assistants

Graduate assistantships (GA) are available in a variety of places across campus, from academic departments and research centers to administrative and service units. This type of appointment comprises the largest number of awards offered by the University. A graduate assistant must be a registered student in a degree program. Unclassified students are not eligible for graduate assistantships.

For these appointments, students should inquire directly to the chair of the department to which they have been admitted or to the appointing officer of a research center or administrative or service unit. Information about the criteria used to select GAs and to assign their responsibilities may be obtained by contacting the chair of the department, the administrator of a research or service unit, or the Graduate School.

The average GA appointment is 50% appointment (20 hours per week) and lasts for one academic year (9 months). There are also some 25% appointments requiring 10 hours per week. A student may hold two simultaneous quarter time (25%) appointments on campus without special approval. GA appointments may be either on a semester-pay basis or a fiscal-pay basis.

Appointments of at least 25% time for the full length of an academic term qualify for a tuition scholarship. The appointment papers, however, must have a starting date on or before the fifteenth day of classes for the tuition scholarship to apply. If a student is appointed for less than a full academic term on a fiscal

pay basis, the appointment will not carry a tuition scholarship. A GA who holds an appointment for the full academic term but resigns before the end of the term still is granted the tuition scholarship for that term. A GA holding an appointment for the full length of two consecutive semesters will be eligible for a tuition scholarship the summer session immediately following the two consecutive semesters.

Salary schedules for graduate assistantships vary from unit to unit. Currently, monthly stipends range from \$736 to \$1020 (50% appointments). Generally doctoral students are paid higher rates than master's students. Information about the specific conditions of the appointment should be directed to the department or unit making the appointment.

In the best interests of both the University and students, academic departments should monitor outside employment and intervene in those cases where outside employment results in problems. Toward this end, it is within the rights and responsibilities of a department: 1) to require that graduate assistants holding outside employment notify their department, so that their performance can be monitored; 2) to make the relinquishing of outside employment a precondition for the continued enrollment of, and/or availability of assistantships to, students whose academic or assistantship performance has been rated Unsatisfactory; and 3) to cancel or not renew the assistantship contracts of those students whose assistantship performance is rated Unsatisfactory and who also hold and do not discontinue outside employment. Graduate students can appeal departmental decisions regarding outside employment and academic/assistantship status through the University's standard routes of appeal.

Federal Work-Study Graduate Assistantships

The Graduate School and the Financial Aid Office jointly administer the Federal Work-Study Assistantship program. This program supports approximately twenty-five graduate assistants each year. The program provides for up to 70% of each graduate assistantship from federal funds, with the remainder coming from departmental or collegiate funds. Students qualify for this program on the basis of financial need. Students must be citizens or permanent residents of the United States. Further information on application procedures and eligibility criteria is available from the Graduate School.

Graduate Fellowships

The Graduate School offers a number of graduate fellowships. The number varies depending on the funds available for these awards each year. All awards of this type are highly competitive based upon scholarship, scores on standardized tests, and potential for success in graduate study. Application for these awards should be made by February 1 preceding the academic year for which the award is desired. Application forms and information about the award may be obtained by contacting the department to which one has been admitted or is seeking admission.

The stipend for a fellowship is \$650 per month, or \$7,150 for eleven months for master's degree students; for doctoral degree students the stipend is \$700 per month, or \$7,700 for eleven months. Graduate School fellowships include a tuition scholarship. While on fellowships, students shall be allowed to hold other appointments (up to a 25% overload) in the University provided that the appointment is directly related to the student's academic and professional goals. Fellows may not hold jobs outside the University, since the purpose of the fellowship is to provide students with an opportunity to devote full time to their graduate studies and research rather than work part time at a job and part time at studies. There may be a training assignment if this has been outlined at the time of the appointment. Fellowship awardees must remain on campus as fulfillment of their award except with permission by the graduate dean.

Traineeships

Individual departments often are able to provide traineeships. Information about these awards should be directed to the department to which one has been admitted or is seeking admission.

Graduate Internships

The graduate internship provides an educational experience for students at either the master's or doctoral level who wish or are required as a part of their program of studies to devote their primary effort toward applied activities in an academic program or a community-based agency or business under the direct supervision of a qualified representative of the host agency or business. Such internship activities may be unpaid or paid. Paid internships are externally sponsored and include the following categories: (a) paid through the University as graduate assistants; (b) paid by an agency or business as an employee; or (c) paid by an agency or business as a consultant. Requests for information should be directed to one's department.

Dissertation Research Awards

Dissertation research awards are designed for superior students who are in the dissertation preparation stage of their graduate education. Selection is based upon a competition primarily considering the students academic research and quality of the dissertation prospectus. Students who will have started their dissertations by the end of the fall semester (advanced to candidacy, completed preliminary examinations, and completed most of their course work and research tools) may apply for the award during the preceding spring semester. A recipient of a dissertation research award must be officially admitted to candidacy by the end of the semester in which the award begins. The application should be submitted by February 1. The award is for a maximum of 11 months at a monthly rate of \$942 or \$10,362 plus tuition scholarship.

Students holding a dissertation research award are expected to devote full-time to the approved research project as determined by their department. The student should be enrolled for graduate credit hours or dissertation hours. The student holding such an award is expected to resign the award at the time the dissertation is submitted to the Graduate School if this comes prior to three weeks before the end of the time period for the award.

Graduate Dean's Fellowships

Several special graduate dean's fellowships are offered annually to students who, although not selected for a regular fellowship, in the judgment of the graduate dean show unusual promise for success in graduate studies. Students will be considered for these awards who have overcome social, cultural, or economic disadvantages in attaining their educational objectives. Application should be made through the chair of the department in which the student is enrolled.

Stipend rates and related regulations are the same as for the regular graduate fellowships. There is no service requirement other than those activities which are required by departments of all students regardless of the source of their support.

Delyte and Dorothy Morris Doctoral Fellowship Program

The Delyte and Dorothy Morris doctoral fellowships have been established by Southern Illinois University at Carbondale to honor a distinguished former president and his wife. During Dr. Morris's tenure as president (1949–71) the University grew to be a comprehensive research institution and established doctoral programs in twenty-two fields, now twenty-five fields.

Eligible applicants must be at the beginning of their doctoral work. Therefore, applications prior to entrance into a doctoral program is required. Only applicants who have received no prior degree from SIUC and who have done no graduate work at SIUC are eligible. Applicants must possess the credentials of very promising scholars as indicated by high scholastic standing, excellent scores on standardized tests, outstanding recommendations, and evidence of high potential for research and publication.

Morris fellows will receive \$12,000 and a tuition scholarship for up to three years of full-time doctoral study at SIUC. Fellows are not eligible to hold another appointment either within or outside the University. Application deadline is February 1. Contact the Graduate School for application information.

State Fellowship Programs for Minority Students

The state of Illinois is currently supporting two fellowship programs for minority graduate students, the Illinois Minority Graduate Incentive Program (IMGIP) and the Illinois Consortium for Educational Opportunity Program (ICEOP). Both programs are designed to develop minority faculty and staff for Illinois institutions of postsecondary education; graduates of each program must agree to seek and accept appropriate employment in Illinois higher education. There are differences between the two programs in terms of eligible minority groups, residency requirements, eligible programs of study, etc. For further information and application materials, contact the IMGIP/ICEOP administrator in the Graduate School. While on IMGIP or full ICEOP awards, students may not hold other appointments either inside or outside the University, since the purpose of the fellowships is to provide students with a source of income which will enable them to study full time. All other rules and regulations governing University fellowships apply to these programs. Deadlines for applications are early in February for the following fall semester.

Patricia Roberts Harris Fellowship Program

The Patricia Roberts Harris fellowship is an interdisciplinary fellowship program that complements an overall Graduate School commitment to attract and retain increased numbers of highly qualified doctoral students from previously underrepresented groups. Stipends for Patricia Roberts Harris fellows are need based with a maximum award of \$14,400. A tuition scholarship and waiver of fees accompany this award. The Graduate School will continue to offer the fellowship in the event that federal funds remain available. While holding a Patricia Harris fellowship, students may not hold other appointments either inside or outside the University, since the purpose of the fellowship is to provide students with a source of income which will enable them to study full time. All other rules and regulations governing University fellowships apply to this program. Contact the Graduate School for information.

Proactive Recruitment of Multicultural Professionals for Tomorrow (PROMPT) Fellowship Program

The PROMPT Program, an initiative developed by the Graduate School to increase the number of minorities receiving advanced degrees, provides fellowship support to master's and doctoral students and assists college faculty to pursue their doctorate.

1. *PROMPT Fellowship.* The Graduate School and each participating department will award up to 16 two-year financial assistance packages to beginning master's and doctoral students. The fellowship includes a teaching or research assistantship, which provides a tuition waiver and stipend for the student.
2. *Human Ecology Faculty Development Fellowship.* This fellowship will provide opportunities for minority college teachers to pursue terminal degrees

at SIUC in specified academic disciplines. Individual support packages will include stipends up to \$14,400 annually for up to three years of study, tuition and fee waivers, 10-hour-per-week teaching assistantship, free housing, and paid conference travel. The Graduate School will continue to offer this fellowship in the event that federal funds remain available.

Contact the Graduate School for application information.

The National Consortium for Educational Access, Inc.

The National Consortium for Educational Access, Inc. (NCEA) offers a funding alternative for those who wish to pursue study towards the doctoral degree. Through NCEA a fellowship award is given, contingent upon and supplemental to the financial assistance provided by a participating doctoral degree granting institution. Black Americans choosing to study in an academic area of underrepresentation or faculty members who want to continue to teach at the college or university level are encouraged to apply. An NCEA fellowship supplement averages between \$3,000 to \$7,000 per year, making combined assistance from NCEA and the doctoral degree granting institution between \$9,000 to \$15,000 per year. Annual fellowship renewals are dependent upon satisfactory performance and normal progress toward the doctoral degree.

NCEA structurally is a partnership agreement among 42 historically black colleges and universities, and over 25 doctoral granting institutions (including SIUC) supported by corporations, foundations, and the university system of Georgia, merged to provide a financial base for those who can help NCEA meet the following goals: (1) increase the pool of black Americans holding the Ph.D. degree in disciplines underrepresented by black Americans and (2) simultaneously increase the number of black Americans with a Ph.D. degree who want to teach in our nation's colleges and universities. Therefore, two distinct kinds of applicants are sought: faculty members working at a historically black college or university who want to continue to teach and the black American who wants to pursue the terminal degree with the intention of teaching in higher education. For further information, contact the Graduate School at SIUC or the executive director of NCEA, 296 Interstate North Parkway, Suite 100, Atlanta, GA 30339 (404-421-3255).

Tuition Scholarships

A limited number of tuition scholarships are awarded each semester to graduate students on the basis of scholarship. The award is for remission of tuition; fees must be paid. Students may receive a tuition scholarship for a maximum of three semesters during their enrollment in the University.

To be eligible the student must be admitted to the Graduate School and to a department, and the student may not hold another University appointment which provides a tuition scholarship. Tuition scholarship recipients must enroll for a minimum of 9 hours each semester (3 hours in summer). There is no service requirement other than the duties required by a department of all students regardless of their source of support.

Application forms are available in the Graduate School office. Students should submit application forms at least one full semester preceding the semester for which the tuition scholarship is requested. Deadline dates are as follows: April 15 for summer session, July 15 for fall semester, and November 15 for spring semester.

Financial Aid Office

Other forms of financial assistance available through the Financial Aid office include part-time employment on and off campus, cooperative work-study programs, summer employment, and student loan funds.

External Support for Graduate Study

Fellowships, grants-in-aid, scholarships, and other similar awards for the support of graduate students are available from many sources outside the University. Students are encouraged to apply for such awards. Information concerning appropriate external sources of support may be obtained from the Office of Research Development and Administration or from department chairs or directors of graduate studies of the student's major department.

Faculty Appointments

No student in a graduate degree program shall be appointed to any full-time faculty position in the department (or equivalent unit) while enrolled in the unit as a student, with the sole exception that a student who has already been admitted to candidacy for the doctoral degree may be granted a term appointment as an instructor in the unit while so enrolled. Such a term appointment shall not be renewable beyond a period of one year.

Satisfactory Progress Policy for Graduate Students

Note: This policy is due to be revised by fall, 1996.

PURPOSE

The Federal Government, the States, and Southern Illinois University at Carbondale have invested large sums of money in order to provide financially needy students the opportunity to attain a post-secondary education. Financial aid recipients are responsible for using the funds in an acceptable manner. Therefore, a classified graduate student who wishes to benefit from the receipt of financial aid must maintain satisfactory progress as defined in this policy.

AUTHORITY

The Higher Education Act of 1965, as amended, and the final regulations set forth by the Department of Education in 34 CFR 668 require that institutions of higher education establish reasonable standards of satisfactory progress. A classified graduate student who does not meet these standards is not eligible to receive applicable federally funded and/or state funded financial aid. Southern Illinois University at Carbondale shall make these standards applicable to the following federal aid programs: Perkins Loan, Federal Work-Study, Stafford Loan Program, and the Supplemental Loans for Students. Applicable state programs are identified by the state agencies. Unclassified graduate students are only eligible to be considered for a Stafford Loan or a Supplemental Loan for Students during one twelve-month period while preparing for a classified program of study.

SATISFACTORY PROGRESS STANDARDS

SIUC requires that a classified graduate student be making satisfactory progress toward a degree if that student wishes to receive financial aid funds. A classified graduate student is making satisfactory progress toward a degree if successfully meeting two basic academic standards. First, a classified graduate student must complete a reasonable number of credit hours attempted each academic year in attendance. Second, a classified graduate student must maintain a scholastic standing, derived from grades, that allows for continued enrollment at the University under current academic guidelines. The following parameters will be used to define these two basic academic standards.

1. Maximum Time to Graduate: A student's eligibility is terminated after the academic year in which a cumulative total of 120 master's hours — 140 hours for the Master of Fine Arts degree — or 140 doctoral hours is attempted. A graduate student must complete at least 50% of the credit hours attempted during any

year. The student's progress will be measured annually after spring semester to determine the progress made for the last academic year of attendance.

2. Grades: A student must be in compliance with the University's policy concerning academic standing, grades, and grade point average, as defined under the topic "Retention" and all other provisions in the current *Graduate Catalog*. A graduate student who is academically suspended from the Graduate School is not making satisfactory progress.

A classified graduate student who does not meet both of the standards set forth above and has been provided a probationary period or who cannot show mitigating circumstances is not maintaining satisfactory progress toward a degree and is no longer eligible to receive federal financial aid funds. (See Appeal for Mitigating Circumstances.)

Nothing in this policy shall be construed as a reduction of external requirements by other federal, state, public, or private agencies when they award or control financial aid. Examples of such agencies are: Veterans Administration, Vocational Rehabilitation, and the NCAA.

DEFINITIONS

Credit Hours Attempted shall be defined as those credit hours for which a student is registered and will receive a grade from SIUC.

Credit Hours Completed, for the purpose of the policy, shall be defined as the total number of academic credit hours for which a graduate student receives any grade from SIUC other than incomplete and failing, withdrawal, unsatisfactory, or audit. Deferred grades count as credit hours completed.

Eligible Students shall be defined as those classified graduate students who are admitted to the Graduate School and to a specific degree program.

Grade Point Average (GPA) is defined in the *Graduate Catalog* under the topic "Retention".

NOTIFICATION OF INELIGIBLE STATUS

It shall be the responsibility of the Graduate School to publish this policy and to notify by letter any graduate student who is no longer eligible to receive financial aid funds. Said notices shall be addressed to the graduate student's most current permanent address on file with the University. *It shall be the responsibility of the student to inform the University of a correct permanent address at all times.* The Financial Aid office will provide the Graduate School with a list of graduate students who are no longer eligible to receive federal or applicable state financial aid.

REINSTATEMENT

Graduate students will have their eligibility to receive financial aid reinstated when they have reached the level of satisfactory progress required of them by this policy. They may achieve this status by the correction of incorrect grades, or by completing the required number of attempted hours during the next academic year of enrollment without the benefit of applicable financial aid.

SATISFACTORY PROGRESS PROBATIONARY PERIOD

A graduate student who has not met the satisfactory progress requirements specified above will be granted an extension for the following calendar year and will remain eligible for financial aid during this period. At the end of the probationary period, the student must have rectified the deficiency and be in compliance with all other established criteria in order to be considered eligible for federal financial aid. Only one such probationary period will be granted a student during graduate studies.

APPEAL FOR MITIGATING CIRCUMSTANCES

A graduate student shall have the opportunity to appeal in writing to explain mitigating circumstances. The appeal should be sent to the Graduate School within 15 days of receipt of the notice of ineligible status. The Graduate School will review the mitigating circumstances documented in the appeal and provide a written decision within 20 days after the receipt of the appeal.

The Graduate School will provide written notification to the Financial Aid Office concerning all graduate students who have been granted an exception for mitigating circumstances.

Tuition and Fees

Tuition and fees charged students are established by the Board of Trustees and are subject to change whenever conditions necessitate. All assessments are on a per-hour basis, with 12 hours considered full time. Students will be assessed the following tuition and fees each term:

Graduate Student Tuition and Fee Schedule

Semester Hours Enrolled	<u>Illinois Residents</u>			<u>Non-Illinois Residents</u>		
	Student Tuition	Student Fees	Total	Student Tuition	Student Fees	Total
1	\$ 85.00	242.82	\$327.82	\$255.00	\$242.82	\$497.82
2	170.00	264.64	434.64	510.00	264.64	774.64
3	255.00	286.46	541.46	765.00	286.46	1051.46
4	340.00	308.28	648.28	1020.00	308.28	1328.28
5	425.00	330.10	755.10	1275.00	330.10	1605.10
6	510.00	351.92	861.92	1530.00	351.92	1881.92
7	595.00	373.74	968.74	1785.00	373.74	2158.74
8	680.00	395.56	1075.56	2040.00	395.56	2435.56
9	765.00	417.38	1182.38	2295.00	417.38	2712.38
10	850.00	439.20	1289.20	2550.00	439.20	2989.20
11	935.00	461.02	1396.02	2805.00	461.02	3266.02
12	1020.00	483.15	1503.15	3060.00	483.15	3543.15
13	1105.00	483.15	1588.15	3315.00	483.15	3798.15
14	1190.00	483.15	1673.15	3570.00	483.15	4053.15
15 or more	1275.00	483.15	1758.15	3825.00	483.15	4308.15

The fees which have been established by the Board of Trustees are payable by all students unless they are specifically exempted by the Board of Trustees. All fees are considered to be institutional in nature and require payment regardless of whether or not the student receives direct benefits or is in a location which permits access to such benefits.

Student fees include: Student Center fee, student activity fee, athletic fee, revenue bond fee, and student medical benefit fee. A microfilming fee of \$60 is required of all doctoral students at the time the dissertation is submitted for approval. If copyright is desired, an additional fee of \$35 is required. (Additional fee information is available in the schedule of classes.) Student fees include the following.

Student Center Fee. Provides funds for the operation of the Student Center.

Student Activity Fee. Provides funding for student organizations and activities on campus.

Athletic Fee. Provides partial funding for the university intercollegiate athletic program.

Revenue Bond Fee. Replaces funds which were previously obtained from tuition payments and used to under-write the funded debt operations of the Student Center and university housing.

Student Medical Benefit Fee. Provides funding for a comprehensive student health program including emergency service; hospitalization; specialty, primary, intermediate, or infirmary care; and prevention program. A student who pays this fee is entitled to full medical benefits at the Health Service. One who has comparable coverage may seek a refund within the first three weeks of each semester by contacting the administrative director of the Health Service. Similarly, a refund is authorized for those students precluded from use of the student health program by unusual or extreme geographic considerations.

Additional Fee Information

1. Students should refer to the Schedule of Classes for specific fee information.
2. Permanent full-time or permanent part-time employees may be eligible for waiver of tuition and waiver of a portion of the student fees. (Graduate assistants are not eligible for a waiver of student fees.) Approval by the department head and the director of the Personnel office must be given prior to enrolling for courses. Employees who are approved pay only the Students Center fee and the Students' Attorney Program fee.
3. Students taking courses in extension or at approved residence centers are required to pay tuition as listed in the table above but do not pay student fees.
4. Graduate students who have registered for the minimum number of credit hours required for their degree are required to remain registered in continuing enrollment. Refer to the section titled Continuing Enrollment Requirement previously in this chapter for the regulations governing this fee.
5. In addition to the above fees, there is a graduation fee. For further information, contact the Office of Admissions and Records. When submitting their dissertations, doctoral students are required to pay a \$60.00 fee to cover the cost of publication of the dissertation abstract and microfilming the dissertation. If copyright is desired, an additional fee of \$35.00 is required.
6. Students holding valid state scholarships are exempt from the above tuition and fees to the extent provided by the terms of the specific scholarship held. Honorary scholarships, which have no monetary value, may be awarded. An Illinois State Teacher Education Scholarship, an Illinois Military Scholarship, or an Illinois General Assembly Scholarship exempts the student from paying tuition, the student activity fee, and the graduation fee. The Illinois Scholarship for Dependents of Prisoners of War and the Illinois Bilingual Scholarship exempt the student from paying tuition and all mandatory nonrefundable fees.
7. Adult education course fees are computed on the basis of approximately sixty cents per contact hour.
8. Other charges which students may incur are those for departmental field trips, library fines, and excess breakage. Also, students taking a course involving use of materials, as distinct from equipment, will ordinarily pay for such materials.
9. Students registering for courses on an audit basis pay the same tuition and fees as though they were registering for the courses for credit.

10. Out-of-state students will find the official University regulations governing determination of residency status for assessment of tuition later in this chapter.
11. Students enrolled in public service courses only pay tuition and a \$3.00 per semester hour fee divided equally between the Student Center and the Student Medical Benefit fund.
12. An identification card fee of \$10.00 will be charged to all first-time SIUC students who register for on-campus credit. This is a one-time charge. For additional information please contact the Student Center ID Card Office.

Payment and Refunding of Tuition and Fees

Tuition and fees are payable each semester during the academic year. Students who register in advance receive a Statement of Account in the mail and may pay either by mail or in person at the Bursar's office, by the deadline date, in accordance with instructions accompanying the statement. Otherwise their advance registration is cancelled and they must register again later. Students who register at the start of a semester must pay tuition and fees according to the schedule which is in effect at that time. Students should read the *Schedule of Classes* for specific information on payment of tuition and fees.

Students who process a program change which places them in a different tuition and fee category than the one for which they originally registered will be billed additional tuition and fees when appropriate. If the change places them in a smaller tuition and fee category and if they have processed the program change within the first two weeks of the semester, they will receive an automatic credit to their account.

A credit for tuition and fees will be made to student accounts for students who officially withdraw from school by the withdrawal deadlines listed later in this chapter. They will receive a refund check in approximately four weeks after the withdrawal has been received by the Office of Admissions and Records. No credit for tuition and fees is made for withdrawal occurring after the deadlines, except as described in the next paragraph.

Special consideration is extended to individuals who leave school for extended military service (6 months or longer). Students will be refunded full tuition and fees paid if they enter military service during the first five weeks of school. If students withdraw during the sixth through tenth weeks of school, they will be refunded half of the paid tuition and fees, and they will receive one-half credit without letter grades for the courses in which they were receiving a passing grade at the time of withdrawal. When the withdrawal occurs after the tenth week, students will receive no refund, but will receive both grades and credit hours for the courses in which they are passing. In all instances, a copy of the military orders or a letter from the commanding officer is required for verification of impending military service. To be eligible for these benefits students must remain in school to within ten days of their military reporting date.

DEFERMENT OF TUITION AND FEES

Students who are experiencing a delay in the receipt of verified financial assistance through the Financial Aid office may be eligible for a cancellation waiver. If granted, a cancellation waiver prevents a student's registration from being cancelled even though tuition and fees have not been paid by the publicized cancellation date.

Information concerning cancellation waiver procedures is available from the Financial Aid office and the office of the Graduate School. This information is also published in the *Daily Egyptian* each term. Guidelines may vary from term to term and year to year so students are advised to seek out accurate information rather than assume they qualify.

Determination of Residency Status

For the purpose of these regulations an *adult* is considered to be a student eighteen years of age or over; a *minor* student is a student under eighteen years of age. The term "the State" means the State of Illinois except in the following instances: (1) for the purposes of assessing graduate tuition, the chancellor may take the term "the State" to include the Kentucky counties of Ballard, Caldwell, Calloway, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon, McCracken, Marshall, Trigg, and Union. (2) For the purposes of assessing graduate tuition for not more than six hours the chancellor may take the term "the State" to include the State of Missouri. Graduate students who take more than six hours per term will be charged out-of-state tuition for all semester hours taken during the term. Except for those exceptions clearly indicated in these regulations, in all cases where records establish that the person does not meet the requirements for Resident status as defined in these regulations the nonresident status shall be assigned.

Determination of residence status of each applicant for admission to the University is made at the time of admission. A student may petition for change to Illinois residency by contacting the Graduate Registration Center to obtain the necessary forms and information. A student may be reclassified at any time by the University upon the basis of additional or changed information. However, if the University has erroneously classified the student as a Resident, the change in tuition shall be applicable beginning with the term following the reclassification; if the University has erroneously classified the student as a nonresident, the change in tuition shall be applicable to the term in which the reclassification occurs, provided the student has filed a written request for review in accordance with these regulations. If the University has classified a student as a Resident based on false or falsified documents, the reclassification to nonresident status shall be retroactive to the first term during which residency status was based on the false or falsified documents.

Adult Student. An adult, to be considered a Resident, must have been a bona fide resident of the State for a period of at least three consecutive months immediately preceding the beginning of any term for which the individual registers at the University, and must continue to maintain a bona fide residency in the State, except that an adult student whose parents (or one of them if only one parent is living or the parents are separated or divorced) have established and are maintaining a bona fide residence in the State and who resides with them (or the one residing in the State) or elsewhere in the State will be regarded as a Resident student.

Minor Student. The residence of a minor shall be considered to be, and to change with and follow:

- a. That of the parents, if they are living together, or the living parent, if one is dead; or
- b. If the parents are separated or divorced, that of the parent to whom the custody of the person has been awarded by court decree or order, or, in the absence of court decree or order, that of the parent with which the person has continuously resided for a period of at least three consecutive months immediately preceding registration at the University; or
- c. That of the adoptive parents, if the person has been legally adopted and, in the event the adoptive parents become divorced or separated, that of the adoptive parent whose residence would govern under the foregoing rules if that parent had been a natural parent; or
- d. That of the legally appointed guardian of the person; or

- e. That of the *natural* guardian, such as a grandparent, adult brother or adult sister, adult uncle or aunt, or other adult relative with whom the person has resided and by whom the student has been supported for a period of at least three consecutive months immediately preceding registration at the University for any term, if the person's parents are dead or have abandoned him and if no legal guardian of the person has been appointed and qualified.

Parent or Guardian. No parent or legal or natural guardian will be considered a resident of the State unless said person (a) maintains a bona fide and permanent place of abode within the State, and (b) lives, except when temporarily absent from the State with no intention of changing the legal residence to some other State or country, within the State.

Emancipated Minor. If a minor has been emancipated, is completely self-supporting, and actually resides in the State, the minor shall be considered to be a Resident even though the parents or guardian may reside outside the State. An emancipated minor who is completely self-supporting shall be considered to *actually reside in the State of Illinois* if a dwelling place has been maintained within the State uninterruptedly for a period of at least three consecutive months immediately preceding term registration at the University. Marriage or active military service shall be regarded as effecting the emancipation of minors, whether male or female, for the purposes of this regulation. An emancipated minor whose parents (or one of them if only one parent is living or the parents are separated or divorced) have established and are maintaining a bona fide residence in the State and who resides with them (or the one residing in the State) or elsewhere in the State will be regarded as a Resident student.

Married Student. A nonresident student, whether male or female, or a minor or adult, or a citizen or noncitizen of the United States, who is married to a resident of the State, may be classified as a Resident so long as the individual continues to reside in the State; however, a spouse through which a student claims residency must demonstrate residency in compliance with the requirements applicable to students seeking Resident status.

Persons without United States Citizenship. A person who is not a citizen of the United States of America, to be considered a Resident, must have permanent resident status with the United States Immigration and Naturalization Service and must also meet and comply with all of the other applicable requirements of these regulations to establish Resident status.

Armed Forces Personnel. A person who is actively serving in one of the Armed Forces of the United States and who is stationed and present in the State in connection with that service and submits evidence of such service and station, shall be treated as a Resident as long as the person remains stationed and present in Illinois. If the spouse or dependent children of such member of the Armed Forces also live in the State, similar treatment shall be granted to them.

A person who is actively serving in one of the Armed Forces of the United States and who is stationed outside the State may be considered a Resident only if the individual was a resident of the State at the time of entry into military service.

A person who is separated from active military service will be considered a Resident of Illinois immediately upon separation providing the person: (a) was a resident of the State at the time of enlistment in the military service, (b) became treated as a Resident while in the military by attending school at Southern Illi-

nois University while stationed within the State, or (c) has resided within the State for a period of three months after separation.

State and Federal Penitentiary. A person who is incarcerated in a State or Federal place of detention within the State of Illinois will be treated as a Resident for tuition assessment purposes as long as said person remains in that place of detention. If bona fide residence is established in Illinois upon release from detention, the duration of residence shall be deemed to include the prior period of detention.

Minor Children of Parents Transferred Outside the United States. The minor children of persons who have resided in the State for at least three consecutive months immediately prior to a transfer by their employers to some location outside the United States shall be considered Residents. However, this shall apply only when the minor children of such parents enroll in the University within five years from the time their parents are transferred by their employer to some location outside the United States.

Dependents of University Employees. For the purposes of tuition assessment, all faculty, staff (including civil service employees), and graduate assistants, as well as their spouses and dependent children, shall be considered as resident students.

Definition of Terminology. To the extent that the terms *bona fide residence*, *independent*, *dependent*, and *emancipation* are not defined in these regulations, definitions shall be determined by according due consideration to all of the facts pertinent and material to the question and to the applicable laws and court decisions of the State of Illinois.

A bona fide residence is a domicile of an individual which is the true, fixed, and permanent home and place of habitation. It is the place to which, whenever absent, the individual has the intention of returning. Criteria to determine this intention include but are not limited to year around residence, voter registration, place of filing tax returns (home state indicated on federal tax return for purposes of revenue sharing), property ownership, driver's license, car registration, vacations, and employment.

Procedure for Review of Residency Status or Tuition Assessment. A student who takes exception to the residency status assigned or tuition assessed shall pay the tuition assessed but may file a claim in writing to the appropriate official for a reconsideration of residency status and an adjustment of the tuition assessed. The written claim must be filed within 30 school days from the date of assessment of tuition or the date designated in the official University calendar as that upon which instruction begins for the academic period for which the tuition is payable, whichever is later, or the student loses all rights to a change of status and adjustment of the tuition assessed for the term in question. If dissatisfied with the ruling in response to the written claim made within said period, the student may appeal the ruling to the chancellor or his/her designee by filing with the appropriate official within twenty days of the notice of the ruling a written request.

UNIVERSITY EMPLOYEES

All full-time University employees who wish to use the employee tuition and fee waiver (civil service and faculty) who are classified as graduate students must seek approval of the Graduate School to enroll in more than six semester hours of courses.

Faculty and Staff

Members of the faculty who are seeking a waiver of tuition and fees, must apply each term for the waiver by completing an Application for Waiver of Tuition/Fees for Faculty form. A form may be obtained from the Personnel Office or from the Graduate Registration Office, Woody Hall, B104. The form should be filled out promptly each term and may be turned in at the Graduate Registration Area or may be mailed to the Personnel office. The amount of the waiver will be automatically credited to the student's account after the faculty status is verified and the application form is processed.

Note that the waiver does not cover the Student Center fee, which must be paid by the student prior to the payment deadline in order to avoid cancellation of the registration. Faculty can phone the Graduate Registration Office (618-453-2969 or 618-453-4552) for any questions regarding the registration process.

Civil Service

Employees in permanent civil service positions will receive a tuition credit and credit applied toward some fees only when authorized by the Personnel office after compliance with personnel regulations. However, civil service employees expecting a waiver of tuition and fees must process a Civil Service Tuition and Fee Waiver form through the Personnel office before registering. If the Personnel office approves the request, the student's account will then be credited with the amount of the waiver.

Note that the waiver does not cover the Student Center fee, which must be paid by the student prior to the payment deadline in order to avoid cancellation of the registration.

OTHER TYPES OF REGISTRATION IN GRADUATE COURSES

The following discussion concerns students who are either unclassified for various reasons or are undergraduates wanting to take graduate-level courses.

Unclassified Students—Non-Degree

A person may apply for admission to the Graduate School as an unclassified student when the applicant does not seek a graduate degree or has applied too late to be admitted to a degree program for the term for which admission is sought.

If an unclassified student is admitted to a degree program at a later time, the director of that program may petition the graduate dean that graduate courses completed while the student was unclassified be applied toward fulfillment of degree requirements. The student will be subject to the rules and regulations of the Graduate School and the department concerned including the completion of at least 9 hours after being admitted to a master's degree program from unclassified status.

Unclassified students are not eligible for fellowships, assistantships, or tuition scholarships.

REGULAR UNCLASSIFIED

A person who seeks admission as a regular unclassified graduate student must have been awarded a bachelor's or higher degree. A student admitted as a regular unclassified student may enroll in graduate courses as long as the student meets retention standards of the Graduate School.

LATE-ENTRY UNCLASSIFIED

An applicant to a degree program who meets Graduate School admission standards but whose materials are received too late for processing may be granted late-entry, unclassified status for the term for which admission was originally

sought. The application papers will continue to be processed for admission to a degree program for the term following the one originally applied for. Whether or not work taken by a student who is unclassified because of late application will later count toward a degree will be decided by the Graduate School and the department concerned.

TEMPORARY UNCLASSIFIED

An applicant who wishes to enroll for one term only or who has applied for admission too late to furnish official transcripts required by the Graduate School may be admitted as a temporary unclassified student. The applicant must sign a special registration form affirming possession of a bachelor's degree. No transcript is required.

A student may register as a temporary unclassified student for one semester only. If the student wishes to enroll in graduate courses after this time period, the student must apply for and be admitted, either to a degree program or to regular unclassified status.

Undergraduate Student Registration in Graduate Courses

GRADUATE CREDIT

An undergraduate student who wishes to register for a graduate course (400- or 500-level course) for graduate credit must file the standard application for admission to the Graduate School and submit to the graduate dean a request for graduate credit. Forms are available in the Graduate School. If the student is academically eligible for admission to a degree program, the student will be allowed to register as an undergraduate for graduate courses for graduate credit when within 12 semester hours of completing requirements for the bachelor's degree.

An undergraduate student who meets these qualifications will be allowed to take graduate courses for graduate credit for one semester or one summer term. If, at the end of the term, the student has not received the bachelor's degree, permission to enroll in graduate courses for graduate credit will be withdrawn until after the bachelor's degree has been conferred.

UNDERGRADUATE CREDIT

The Graduate School has the responsibility of approving the registration of undergraduate students in 500-level courses for undergraduate credit. Undergraduate students should only be encouraged to take 500-level courses if they are properly qualified. In dealing with these requests the following procedures must be followed.

The chair of the department offering the course, in collaboration with the instructor who is teaching the particular course, should forward a letter to the graduate dean indicating their approval for this student to enroll in the 500-level course for undergraduate credit. Since such a request should only be made for superior students, the letters should include such information as: (1) undergraduate GPA; (2) general description of the student's academic work; and (3) why this course would be beneficial. The student must stop by the Graduate School to obtain permission to enroll upon receipt of the letter by the graduate dean. If permission to enroll has been granted by the graduate dean, this will be indicated to the registration center. Accordingly, the student should bring the request form or add/drop slip to the Graduate School.

Student Conduct Code

I. Introduction

A. Purpose

Southern Illinois University at Carbondale is dedicated not only to learning, research, and the advancement of knowledge, but also to the development of ethically sensitive and responsible persons. The University seeks to achieve these goals through sound educational programs and policies governing individual conduct that encourage independence and maturity. By accepting membership in this University, an individual joins a community characterized by free expression, free inquiry, intellectual honesty, respect for others, and participation in constructive change. All rights and responsibilities exercised within this academic environment shall be compatible with these principles.

B. Rights and Responsibilities

Students shall be free to examine all questions of interest to them and to express opinions. They shall be guaranteed all constitutional rights including free inquiry, expression, and assembly. All regulations shall seek the best possible reconciliation of the principles of maximum academic freedom and necessary order.

C. Title/Authority/Enforcement

These regulations shall be known as the Student Conduct Code for Southern Illinois University at Carbondale. The regulations contained herein are established under the authority granted by law to the Board of Trustees to establish rules and regulations for Southern Illinois University and pursuant to Chapter 3 *Policies of the Board of Trustees C* authorizing the Chancellor to develop regulations dealing with student rights and conduct. All students of the University community have the responsibility to comply with these regulations. The responsibility for the enforcement of the Code rests with the Chancellor of Southern Illinois University at Carbondale or his/her designees. The effective date for this Code is June 9, 1986.

D. Jurisdiction

The University community has a responsibility to provide its members those privileges, opportunities, and protections which encourage and maintain an environment conducive to educational development. Accordingly, this Code shall apply to (1) conduct occurring on property owned or controlled by the University, and (2) conduct occurring elsewhere, but only if the student's conduct has substantially interfered with the University's educational functions, including, but not limited to, interference with the educational pursuits of students, faculty, or staff or conduct having its origins in the educational process.

When a student has been apprehended for violation of a law, the University will not request special consideration because of the individual's status as a student. The University will cooperate fully with law enforcement and other agencies administering a corrective or rehabilitative program for the student. The University reserves the right to initiate concurrent disciplinary action.

Academic dishonesty violations in the School of Law will be adjudicated through that unit's Professional Ethics Policy. Academic dishonesty violations in the School of Medicine will be adjudicated

through that unit's Student Progress System. Law students and medical students on the Carbondale campus charged with other violations of the Code will be treated as any undergraduate and graduate student. In addition, law students charged with violations of social misconduct may also be charged under the School of Law's Professional Ethics Policy and medical students on the Carbondale campus charged with violations of social misconduct may also be charged under the School of Medicine's Student Progress System.

E. Definitions

1. "Academic officer" means any Instructor, Department Chairperson, Dean, Director, or Coordinator.
2. "Adjudication" means the resolution of disciplinary charges, including the appeal process.
3. "Admission" means admission, readmission, re-entry, registration, and re-registration as a student in any educational program at the University.
4. "Appeal" means a process for reviewing an earlier decision.
5. "Board" means the Board of Trustees of Southern Illinois University.
6. "Charge" means an accusation of a violation of the Student Conduct Code of Southern Illinois University at Carbondale.
7. "Code" means the Student Conduct Code for Southern Illinois University at Carbondale.
8. "Days" means all days when classes are in session.
9. "Formal" disciplinary procedures are disciplinary procedures used when the question of guilt is contested or when the student accepting responsibility for the disciplinary charges prefers to have a full hearing on the sanction.
10. "Informal" disciplinary procedures are disciplinary procedures used when the question of guilt is not contested and the student prefers to have an immediate decision on the sanction.
11. "Instructor" means any teaching assistant or member of the faculty.
12. "Members of the University Community" means the members of the Board of Trustees, employees, and registered students of Southern Illinois University at Carbondale.
13. "Chancellor" means that individual appointed by the board as the chief executive, administrative, and academic officer of Southern Illinois University at Carbondale and any person authorized or directed by the chancellor to act on that officer's behalf.
14. "Sanction" means a measure imposed on account of violation(s) of the Code.
15. "Student" means any person registered for, enrolled in, or auditing one or more classes.
16. "University" means Southern Illinois University at Carbondale.
17. "University official" means any individual authorized or directed by the Chancellor or his/her designee to perform any delegated function.
18. "Violation" means a breach of conduct governed by the Code. The standard of proof used shall be a preponderance of the evidence.

II. Violations

A. Acts of Academic Dishonesty

1. Plagiarism: Representing the work of another as one's own work.
2. Preparing work for another that is to be used as that person's own work.

3. Cheating by any method or means.
 4. Knowingly and willfully falsifying or manufacturing scientific or educational data and representing the same to be the result of scientific or scholarly experiment or research.
 5. Knowingly furnishing false information to a University official relative to academic matters.
 6. Soliciting, aiding, abetting, concealing, or attempting conduct in violation of this Code.
- B. Acts of Social Misconduct
1. Violence
 - a. Rape
 - b. Physical abuse
 - c. Direct threat of violence
 - d. Harassment*
 - e. Intimidation
 - f. Intentional obstruction or substantial interference with any person's right to attend or participate in any University function.
 - g. Participation in any activity to disrupt any function of the University by force or violence
 - h. Reckless behavior representing a danger to person(s)
 2. Property Damage
 - a. Arson
 - b. Willful or malicious damage or destruction of property
 - c. Reckless behavior representing a danger to property
 3. Weapons (unauthorized possession and/or use)
 - a. Firearms
 - b. Explosives and/or explosive devices
 - c. Any type of arms defined as weapons in 720 Illinois Compiled Statutes 5/33A.
 - d. Pellet guns and B-B guns
 - e. Fireworks
 4. Disobedience
 - a. Disobedience, interference, resistance, or failure to comply with direction of an identified University official acting in the line of duty.
 - b. Trespassing
 - c. Unauthorized entry
 5. Deception
 - a. Furnishing false information to the University with intent to deceive
 - b. Forgery, alteration, or misuse of University documents, records, and identification cards
 - c. Forgery or issuing a bad check with intent to defraud
 6. Theft
 - a. Misappropriation or conversion of University funds, supplies, equipment, labor, material, space, or facilities
 - b. Possession of stolen property
 7. Safety
 - a. Intentionally entering false fire alarms
 - b. Bomb threats
 - c. Tampering with fire extinguishers, alarms, or safety equipment
 - d. Tampering with elevator controls and/or equipment
 - e. Failure to evacuate during a fire, fire drill, or false alarm

8. Cannabis or Controlled Substances (as defined in 720 Illinois Compiled Statutes 550 and 570).
 - a. Manufacture
 - b. Sale or delivery
 - c. Unauthorized possession and/or use
9. Hazing (as defined in 720 Illinois Compiled Statutes of 120).
10. Abusive or disorderly conduct
11. Violations of University Housing regulations
12. Violations of other duly promulgated University policies or regulations, including but not limited to, alcohol, demonstrations, pets, smoking, solicitation, and guidelines for access to data and programs stored on the computer, will be adjudicated under this Code.
13. Acts Against the Administration of this Code
 - a. Initiation of a complaint or charge knowing that the charge was false or with reckless disregard of its truth
 - b. Interference with or attempt to interfere with the enforcement of this Code, including but not limited to, intimidation or bribery of hearing participants, acceptance of bribes, dishonesty, or disruption of proceedings and hearings held under this Code.
 - c. Knowing violation of the terms of any disciplinary sanction or attached conditions imposed in accordance with this Code.
14. Soliciting, aiding, abetting, concealing, or attempting conduct in violation of this Code.

*Charges of sexual harassment may be adjudicated under the University Sexual Harassment Policy.

III. Sanctions

The following are sanctions which may be imposed for a violation of this Code. Also, a condition may accompany a sanction. Conditions include, but are not limited to, restitution of damages, work projects, required counseling or therapy, required academic performance, etc. A condition may include loss of certain university privileges. If a condition accompanies a sanction, the condition must be related to the violation.

- A. Failure of an assignment, quiz, test, examination, or paper
A failing grade (*F*) may be assigned for the work in connection with which the violation occurred.
- B. Failure in a course
A failing grade (*F*) may be assigned for the course in which the violation occurred.
- C. Disciplinary Reprimand
In cases of minor violations and when the violation is acknowledged by the student, a written reprimand may be issued by the coordinator of Student Judicial Affairs or his/her designee upon the recommendation of a University official. The purpose of the reprimand shall be to call to the student's attention the responsibility of meeting certain minimal community standards. Since a reprimand is given only when the violation is acknowledged the sanction may not be appealed.
- D. Disciplinary Censure
Disciplinary censure is a written warning to the student that the cited behavior is not acceptable in the University community and that further misconduct may result in more severe disciplinary action. The student may appeal the finding of a violation but may not appeal the severity of the sanction.

E. Disciplinary Probation

Disciplinary probation removes a student from good disciplinary standing. The probation shall last for a stated period of time and until specific conditions, if imposed, have been met. Any misconduct during the probationary period will bring further disciplinary action and may result in suspension. Probationary status prevents the student from representing the University in some extracurricular activities and may result in the loss of some types of financial assistance.

F. Disciplinary Suspension

Disciplinary suspension is an involuntary separation of the student from the University for a stated period of time and until a stated condition, if imposed, is met after which readmission will be permitted. Disciplinary suspension is entered on the student's transcript for the duration of the suspension.

G. Indefinite Suspension

Indefinite suspension is an involuntary separation of the student from the University for an unprescribed period of time and until a stated condition, if imposed, is met. Any consideration for readmission requires a written petition to the appropriate administrative official before readmission will be considered. The indefinite suspension is entered on the student's transcript for the duration of the suspension.

H. Interim Separation

If the chancellor or his/her designee has reasonable cause to believe that a serious and direct threat to the safety and well-being of the members and/or property of the University community will be present if an individual is permitted to remain an active member of the community an interim separation may be imposed. A preliminary hearing or the opportunity for a preliminary hearing shall be afforded. If it is impossible or unreasonably difficult to conduct a preliminary hearing prior to the interim separation the individual shall be afforded the opportunity for such a preliminary hearing at the earliest practical time. The purpose of the preliminary hearing is to determine if there is justification to invoke an interim separation. During the preliminary hearing, the student will be provided a statement of the reasons for interim separation and will be afforded an opportunity to rebut. Interim separation is temporary and shall be enforced only until the completion of a full disciplinary hearing. A full disciplinary hearing shall be provided within a reasonable period of time.

IV. Policies and Procedures Applicable to Academic Dishonesty**A. Judicial Structure****1. Department Level**

The department chairperson shall have initial jurisdiction over complaints of academic dishonesty and may adjudicate the case if the student accepts responsibility for the violation(s). In any case where the student does not accept responsibility for the violation(s) the chair shall review the complaint of alleged academic dishonesty and decide whether there are sufficient grounds to formally charge the student with a violation of the code. When social misconduct is also involved in an incident(s) of academic dishonesty, the chair shall charge the student with all violations. All charges shall be adjudicated under the provisions for academic dishonesty.

2. College/School Level

- a. Each dean has the responsibility for the formal resolution of charges against a student. For the purpose of administering this code, the Graduate School dean shall operate at the level of other deans.
- b. Charges of falsifying information on applications for admission shall be adjudicated by the director of Admissions and Records. The director of Admissions and Records, for the purpose of administering this Code, shall operate at the level of other deans.

3. Chancellor Level

This level has jurisdiction to hear appeals.

B. Informal Disciplinary Procedures

1. Informal Hearing

In cases where the student admits to a violation of the Code relating to academic dishonesty the matter may be adjudicated at the department level. An informal discussion between the instructor and the student shall be held. If the student admits to a violation of the Code, the instructor shall inform the department chair and the student whether, as a sanction for the violation, the instructor will assign a failing grade for the work and/or course. The instructor shall also recommend to the chairperson any other sanction that may be imposed, pursuant to IV.B.2. The chair shall meet with the instructor and the student, receive the acknowledgment of responsibility from the student, receive the recommendation from the instructor, and apprise the student of the sanction.

2. Sanctions

The full disciplinary history of the student shall be considered in determining the sanction. Sanctions which may be imposed when the student accepts responsibility for the conduct are:

- a. The student may be removed from the class for the remainder of the testing period.
- b. The instructor may assign the student a failing grade for the work and/or course.
- c. The student may be placed on disciplinary probation.
- d. Any combination of the above.
- e. The department chair may recommend to the dean that the student be suspended from the University. The department chair shall also inform the student in writing that a disciplinary suspension is recommended as an appropriate sanction for the student's violation of the Code.
 - (1) If the student elects to challenge the severity of the recommended suspension, the student may request an informal hearing on the proposed sanction(s) before the dean.
 - (2) The student must submit a request in writing for an informal hearing on the proposed sanction(s) within 5 days of receipt of the chairperson's recommendation.
 - (3) In such cases the dean or his/her designee shall meet with the student, the chair and/or instructor, and apprise the student of the sanction(s).

3. Notification

The department chair shall send written verification of the sanction(s) to the student. Such notification will normally be sent within five days of the meeting with the instructor and the student.

4. Appeal

The student may appeal the severity of the sanction or failure to follow prescribed procedure, pursuant to IV.C.8. A student may not appeal the question of guilt.

C. Formal Disciplinary Procedures

1. Initiation of a Complaint

Any member of the University community may initiate disciplinary proceedings by filing a complaint within twenty days of discovery of an alleged violation of the Student Conduct Code.

- a. The complaint must be made in writing with all available evidence attached.
- b. The complaint shall be filed with the departmental chair of the unit in which the violation is alleged to have occurred.
- c. The complaint may include a recommendation concerning the appropriate sanction(s) to be imposed if, following formal adjudication, the student is found in violation of the Code.
- d. In any case initiated by an instructor, the complaint shall state whether or not the instructor will assign a failing grade for the work and/or course if, following formal adjudication, the student is found in violation of the Code in the manner alleged in the complaint. In any such case the instructor shall assign an "Incomplete" in lieu of a letter grade pending adjudication and final resolution of the complaint.

2. Formal Charges

The department chair shall review the complaint and, within ten days, determine whether there are grounds to believe a violation may have occurred.

- a. If there are sufficient grounds to believe a violation may have occurred, within five days of such determination the chair shall notify the student in writing of the violation with which the student is charged. A copy of the charges shall be submitted to the appropriate academic dean.
- b. If there are no grounds for disciplinary charges the complainant shall be notified. If the complainant wishes to proceed with a disciplinary charge, a written request must be submitted to the appropriate academic dean within ten days of the receipt of the notification. The dean shall review the request, the complaint, and the department chair decision and decide whether to allow the complainant to pursue formal charges of the alleged violation set forth in the complaint.

3. Formal adjudication

In cases of alleged academic dishonesty where guilt is disputed by the student, the case will be adjudicated at the dean's level with a formal hearing. The dean shall notify the student in writing regarding the date, time, and place of the hearing. The notification will be considered to have been delivered if the notice is sent to the current local address of the student as provided to Admissions and Records by the student. Thus, failure to notify the University of changes of address could result in a hearing being held *in absentia*.

- a. The student has the right to:
 - (1) Be apprised of all evidence.
 - (2) Hear and question available witnesses. Sworn statements will be accepted from those persons unable to attend the hearing.
 - (3) Not be compelled to offer evidence which may be self-incriminating.

- (4) Receive a written decision specifying judicial actions.
 - (5) Appeal the decision, pursuant to IV.C.8.
 - b. The student has the option to have:
 - (1) Advisory assistance. The responsibility for selecting an advisor is placed on the charged student. The advisor may be any individual except a principal in the hearing. The advisor shall be limited to advising the student and shall not participate directly in the hearing.
 - (2) An open or closed hearing.
 - (3) Witnesses testify in his/her behalf. Sworn statements shall be accepted from those persons unable to attend the hearing. Character witnesses may be excluded by the hearing agent.
 - c. Hearing agent

The charged student may submit a preference for a hearing before a judicial board or the dean or his/her designee. The dean shall decide the hearing agent.
4. Judicial Hearing Agents
 - a. Judicial Board Directives
 - (1) Size

A judicial board shall be comprised of seven members. A quorum required to conduct a hearing shall be five members. A decision shall be reached by majority vote.
 - (2) Membership
 - (a) Student members shall meet the following standards:
 - (i) Full time as defined by the director of Admissions and Records.
 - (ii) Good disciplinary standing since matriculation.
 - (iii) Minimum grade point average of 2.5 (undergraduate); 3.0 (graduate); or professional student in good standing.

NOTE: Full time University employees who are enrolled in classes may not serve as student members. Graduate assistants and student workers in the department in which the incident occurred shall be excluded from judicial boards.

 - (b) Faculty members may include any person under faculty appointment, excluding administrators.
 - (c) All appointments shall be reviewed by Student Judicial Affairs to ensure that candidates meet the minimal requirements. A list of judicial board members may be obtained from Student Judicial Affairs.
 - (3) Judicial Board Operating Papers

Each Judicial Board may develop its own operating paper. Each operating paper shall be reviewed by Student Judicial Affairs to ensure consistency with the provisions of this Code.
 - (4) Administrative Advisors

Each judicial board shall have an administrative advisor from Student Judicial Affairs. The advisor's role shall be limited to providing guidance and clarification. The advisor shall sit with the panel in both open and executive sessions.
 - (5) Terms

Each judicial board shall be in session for twelve weeks during the fall and spring terms and for four weeks during

the summer term. A board is not expected to meet during the first two nor the last two weeks of a term. Disciplinary cases shall be adjudicated by an administrative hearing officer when a board is not in session or is defunct.

(6) Powers

A judicial board shall make a decision of guilt or innocence and shall make a recommendation on the sanction to the Dean.

b. Administrative Hearing Officer

The administrative hearing officer shall be the academic dean or that officer's designee.

5. Judicial Hearings

a. Time limitations

(1) A student electing formal adjudication shall have a minimum of five days written notice prior to a hearing.

(2) A student shall have five days after receiving notification of the decision in which to submit an appeal.

b. Failure to appear

Initial jurisdiction hearings shall be held *in absentia* when the charged student fails to appear. An appeal shall be dismissed when the student fails to appear.

c. Tape recordings

All formal judicial hearings shall be tape recorded. After the appeal period has expired the tape may be erased.

d. Challenge for cause

A student may challenge panel members for cause. The decision to remove a panel member will be made by the other panel members.

e. Peremptory challenge

A student may challenge one panel member without assigning any cause. A peremptory challenge will be automatically honored by the chair of the panel.

f. Confidentiality

All evidence, facts, comments, and discussion at a closed hearing and all executive sessions shall be held in strict confidence. Failure to maintain confidentiality may result in removal of judicial board members by the dean.

6. Sanctions

A student's disciplinary history shall have no bearing on the question of guilt or innocence. If, however, a student is found to be in violation of the Code, the full disciplinary history shall be considered in determining the sanction. The academic dean shall request the student's disciplinary record from Student Judicial Affairs. The academic dean and the coordinator of Student Judicial Affairs shall develop lines of communication to keep each other apprised of a student's disciplinary history for this purpose. Sanctions which may be imposed are:

(1) The student may be assigned a failing grade for the work and/or course.

(2) The student may be placed on disciplinary probation.

(3) The student may be suspended from the University.

(4) Any combination of the above.

7. Notification

The dean shall send written notification of the decision of the hearing and sanction(s) to the student. Such notifications will normally be sent within five days of the receipt of the judicial

board's recommendation or within five days of the administrative hearing.

8. Appeals

Any disciplinary determination or sanction involving academic dishonesty may be appealed from the dean's level by submitting an application for appeal to the Vice Chancellor for Academic Affairs and Provost within five days after receiving notification of the prior decision. However, the right of appeal does not guarantee that an appeal will be granted nor does it entitle the student to a full rehearing of the case. An appeal hearing, if granted, will be limited to the issues set forth in subparagraph c. below.

- a. The student may submit a preference for an appeal hearing before a judicial board or an administrative hearing officer. The Vice Chancellor for Academic Affairs and Provost shall decide the hearing agent.
- b. The burden of proof at the initial jurisdiction level is on the University. At the appeal level, however, the student bears the burden of demonstrating error as defined in the following item.
- c. Three issues constitute possible grounds for an appeal:
 - (1) Were judicial procedures correctly followed?
 - (2) Did the evidence justify a decision against the student?
 - (3) Was the sanction(s) imposed in keeping with the gravity of the violation? Previous violation(s) of the Code and the accompanying sanction(s) will be considered in determining a proper sanction for a current violation.
- d. The appropriate committee of the judicial board or the administrative hearing officer will review the appeal to ascertain whether there are sufficient grounds for a hearing.
- e. If an appeal hearing is granted the agent hearing the appeal will not rehear the case. The agent will limit its review to the specific points of the appeal that were accepted at the screening review.
- f. The agent hearing the appeal may:
 - (1) Affirm the decision(s) of the initial jurisdiction.
 - (2) Affirm the decision(s) and reduce the sanction.
 - (3) Modify the decision(s) of violation and reduce the sanction.
 - (4) Reverse the decision(s) of violation, remove the sanction, and dismiss the case.
- g. A student dissatisfied with the decision on appeal may seek review by the chancellor by submitting such a request in writing within five days after receiving notification of the prior decision. Review by the chancellor shall also be limited to the issues specified in subparagraph c. above.
- h. Further appeal may be made to the Board of Trustees by filing an application for appeal in accordance with Article VI Section 2 of the *Bylaws*. The Board of Trustees will review only those administrative decisions which meet the requirements for review established by the Board's *Bylaws*.

9. Implementation of Sanction(s)

- a. The disciplinary sanction(s) shall be implemented when:
 - (1) The student has waived or exhausted the right of appeal,
or
 - (2) The appeal period has expired.
- b. The sanction shall be as specified by the final adjudicating agent. However, when the sanction relates to the assignment

- of a grade, the instructor has the responsibility of assigning the grade. In any case where an "incomplete" was assigned for a course pending adjudication of charges of academic dishonesty against the student, the instructor shall immediately change the "incomplete" to an appropriate letter grade.
- c. A student separated from the University for disciplinary reasons is subject to the normal guidelines for tuition and fee refunds, grades, and financial penalties for terminating a housing contract.
- d. Following the implementation of the sanction, all records relating to the case will be filed with Student Judicial Affairs
- 10. Exceptions

The above procedures shall be followed unless an exception is authorized in writing by the Vice Chancellor for Academic Affairs and Provost. All requests for temporary exceptions shall be submitted in writing to the Vice Chancellor. Any exception allowed shall be limited to individual cases and shall not infringe upon a student's right to written notice, opportunity for a hearing, and an appeal.

V. Policies and Procedures Applicable to Social Misconduct

A. Judicial Structure

1. Unit Level

A case may be resolved informally by a University official in a department/office as authorized by the coordinator of Student Judicial Affairs pursuant to V.B.1. All cases in which guilt is disputed shall be referred to Student Judicial Affairs.

2. Campus Level

The Campus Judicial Board for Discipline and/or the coordinator of Student Judicial Affairs has initial jurisdiction over social misconduct not handled by other offices. The campus level also shall hear appeals from the unit level.

3. Chancellorial Level

This level has jurisdiction to hear appeals.

B. Informal Disciplinary Procedures

1. Informal Hearing

In cases where the student accepts responsibility for the social misconduct the matter may be adjudicated at the department/office level. An informal discussion between the University official and the student shall be held. If the student accepts responsibility for the charge(s) the University official shall recommend a sanction to the coordinator of Student Judicial Affairs.

2. Sanctions

The full disciplinary history of the student shall be considered in determining the sanction. The University official may recommend to the coordinator of Student Judicial Affairs any of the following sanctions:

- a. Disciplinary reprimand
- b. Disciplinary censure
- c. Disciplinary probation
- d. Disciplinary suspension
- e. Indefinite suspension
- f. Interim suspension

3. Notification

The coordinator of Student Judicial Affairs shall send written

verification of the sanction to the student within five days of the receipt of the recommendation.

4. Appeals

A student may appeal the severity of the sanction pursuant to V. C. 9 of this Code on the grounds of unreasonable severity or of failure to follow prescribed procedure. A student may not appeal the question of guilt.

C. Formal Disciplinary Procedures

1. Initiation of a Complaint

a. Any member of the University community may initiate disciplinary proceedings by filing a complaint with the coordinator of Student Judicial Affairs within twenty days of the discovery of an alleged violation of the Student Conduct Code. The complaint must be in writing with all available evidence attached.

b. The coordinator of Student Judicial Affairs shall make a preliminary review of the complaint. If there are no grounds for disciplinary charges or if the complaint should be processed under another policy the complainant shall be notified. If the complainant wishes to proceed with a disciplinary charge a written request must be submitted to the director of Student Development within ten days of the receipt of the notification. The director shall review the request, the complaint, and the coordinator of Student Judicial Affairs decision and decide whether to pursue formal charges.

2. Formal Charges

In cases of alleged social misconduct when guilt is disputed by the student, the case will be adjudicated at the appropriate level with a formal hearing. The coordinator of Student Judicial Affairs shall notify the student in writing regarding the charge(s) as well as the date, time, and place of the hearing. The notification will be considered to have been delivered if the notice is sent to the current local address of the student provided to Admissions and Records by the student. Thus, failure to notify the University of changes of address could result in a hearing being held *in absentia*.

3. Fact-Finding Conference

The coordinator of Student Judicial Affairs shall conduct a fact-finding conference which shall include the charged student and may include the complainant and/or witnesses. Matters to be examined at the fact-finding conference are:

a. The charge(s) filed against the student.

b. The evidence against the student.

c. The witnesses, if any, that shall testify.

d. The provisions of the Student Conduct Code.

e. Whether to continue disciplinary procedures.

f. The student may elect to acknowledge the violation(s) at the fact-finding conference and have a decision made on the sanction by the coordinator of Student Judicial Affairs at the fact-finding conference. If this option is chosen the student may appeal only the severity of the sanction.

g. The student may elect to have a formal hearing scheduled in the future.

h. If the student fails to make an appointment or keep a scheduled appointment for a fact-finding conference, the case may

automatically be referred to the appropriate hearing agent for a hearing.

4. Formal Adjudication

a. The student has the right to:

- (1) Be apprised of all evidence.
- (2) Hear and question available witnesses. Sworn statements will be accepted from those persons unable to attend the hearing.
- (3) Not be compelled to offer evidence which may be self-incriminating.
- (4) Receive a written decision specifying judicial actions.
- (5) Appeal the decision, pursuant to V.C.9.

b. The student has the option to have:

- (1) Advisory assistance. The responsibility for selecting an advisor is placed on the charged student. The advisor may be any individual except a principal in the hearing. The advisor shall be limited to advising the student and shall not participate directly in the hearing.
- (2) An open or closed hearing.
- (3) Witnesses testify in his/her behalf. Sworn statements shall be accepted from those persons unable to attend the hearing. Character witnesses shall be excluded.

c. Hearing agent

The charged student may submit a preference for a hearing before a judicial board or an administrative hearing officer. The appropriate University official may decide the hearing agent.

5. Judicial Hearing Agents

a. Judicial Board Directives

- (1) Size. A judicial board shall be comprised of seven members. A quorum required to conduct a hearing shall be five members. A decision shall be reached by majority vote.
- (2) Membership
 - (a) Student members shall meet the following standards:
 - (i) Full time as defined by the director of Admissions and Records.
 - (ii) Good disciplinary standing since matriculation.
 - (iii) Minimum grade point average of 2.5 (undergraduate); 3.0 (graduate); or professional student in good standing.

NOTE: Full time University employees who are enrolled in classes may not serve as student members.

- (b) Faculty members may include any person under faculty appointment, excluding administrators.
- (c) All appointments shall be reviewed by Student Judicial Affairs to ensure that candidates meet the minimal requirements. A list of judicial board members may be obtained from Student Judicial Affairs.
- (3) Judicial Board Operating Papers

Each Board may develop its own operating paper. Each operating paper shall be reviewed by Student Judicial Affairs to ensure consistency with the provisions of this Code.
- (4) Administrative Advisors

Each judicial board shall have an administrative advisor from Student Judicial Affairs. The advisor's role shall be

limited to providing guidance and clarification. The advisor shall sit with the panel in both open and executive sessions.

(5) Terms

Each judicial board shall be in session for twelve weeks during the fall and spring terms and for four weeks during the summer term. A board is not expected to meet during the first two nor the last two weeks of a term. Disciplinary cases shall be adjudicated by an administrative hearing officer when a board is not in session or is defunct.

(6) Powers

A judicial board shall make a decision of guilt or innocence and shall make a recommendation on the sanction to the appropriate administrator.

b. Administrative Hearing Officer

An administrative hearing officer appointed by the coordinator of Student Judicial Affairs shall be available at all levels to adjudicate disciplinary cases.

6. Judicial Hearings

a. Time Limitations

(1) A student electing formal adjudication shall have a minimum of five days written notice prior to a hearing.

(2) A student shall have five days after receiving notification of the decision in which to submit an appeal.

b. Failure to appear

Initial jurisdiction hearing shall be held *in absentia* when the charged student fails to appear. An appeal shall be dismissed when the student fails to appear.

c. Tape recordings

All formal judicial hearings shall be tape recorded. After the appeal period has expired the tape may be erased.

d. Challenge for cause

A student may challenge panel members for cause. The decision to remove a panel member will be made by the other panel members.

e. Peremptory challenge

A student may challenge one panel member without assigning any cause. A peremptory challenge will be automatically honored by the chair of the panel.

f. Confidentiality

All evidence, facts, comments, and discussion at a closed hearing and all executive sessions shall be held in strict confidence. Failure to maintain confidentiality may result in administrative removal of judicial board members by the coordinator of Student Judicial Affairs.

7. Sanctions

A student's disciplinary history shall have no bearing on the question of guilt or innocence. If, however, a student is found to be in violation of the Code, the full disciplinary history shall be considered in determining the sanction. The coordinator of Student Judicial Affairs shall request the student's disciplinary records from the academic dean. The academic dean and the director of Student Development shall develop lines of communication to keep each other apprised of the student's disciplinary history for this purpose.

Sanctions which may be imposed are:

- a. Disciplinary reprimand
- b. Disciplinary censure
- c. Disciplinary probation
- d. Disciplinary suspension
- e. Indefinite suspension
- f. Interim separation

8. Notification

The coordinator of Student Judicial Affairs shall send written notification of the decision of the hearing and sanction(s) to the student. Such notification will normally be sent within five days of receipt of the judicial board's recommendation or within five days of the administrative hearing.

9. Appeals

Any disciplinary determination or sanction involving social misconduct may be appealed to the next level in the judicial structure by submitting an application for appeal in writing to the director of Student Development or the Vice Chancellor for Student Affairs, as appropriate, within five days after receiving notification of the prior decision. However, the right of appeal does not guarantee that an appeal will be granted nor does it entitle the student to a full rehearing of the case. An appeal, if granted, will be limited to the issues set forth in subparagraph c. below.

- a. The student may submit a preference for an appeal hearing before a judicial board or an administrative hearing officer. The appropriate university official shall decide the hearing agent.
- b. The burden of proof at the initial jurisdiction level is on the University. At the appeal level, however, the student bears the burden of demonstrating error as defined in the following item.
- c. Three issues constitute possible grounds for an appeal:
 - (1) Were judicial procedures correctly followed?
 - (2) Did the evidence justify a decision against the student?
 - (3) Was the sanction(s) imposed in keeping with the gravity of the violation? Previous violation(s) of the Code and the accompanying sanction(s) will be considered in determining a proper sanction for a current violation.
- d. The appropriate committee of the judicial board or the administrative hearing officer will review the appeal to ascertain whether there are sufficient grounds for a hearing.
- e. If an appeal hearing is granted the agent hearing the appeal will not rehear the case. The agent will limit its review to the specific points of the appeal that were accepted at the screening review.
- f. The agent hearing the appeal may:
 - (1) Affirm the decision(s) of the initial jurisdiction.
 - (2) Affirm the decision(s) and reduce the sanction.
 - (3) Modify the decision(s) of the violation and reduce the sanction.
 - (4) Reverse the decision(s) of violation, and remove the sanction, and dismiss the case.
- g. A student dissatisfied with the decision of the Vice Chancellor for Student Affairs may seek review by the Chancellor by submitting such a request in writing within five days after receiving notification of the prior decision. Review by the Chan-

cellor shall also be limited to the issues specified in subparagraph c. above.

- h. Further appeal may be made to the Board of Trustees by filing an application for appeal in accordance with article VI section 2 of the Board *Bylaws*. The Board of Trustees will review only those administrative decisions which meet the requirements for review established by the Board's *Bylaws*.

10. Implementation of Sanction(s)

- a. The disciplinary sanction(s) shall be implemented when:
 - (1) The student has waived the right of appeal, or
 - (2) The appeal period has expired.
- b. The sanction shall be as specified by the final adjudicating agent.
- c. A student separated from the University for disciplinary reasons is subject to the normal guidelines for tuition and fee refunds, grades, and financial penalties for terminating a housing contract.
- d. Any type of disciplinary separation from the University may be accompanied by a condition which bars the student from University property.

11. Exceptions

The above procedures shall be followed unless an exception is authorized in writing by the coordinator of Student Judicial Affairs. All requests for temporary exceptions shall be submitted in writing to the coordinator of Student Judicial Affairs. Any exception allowed shall be limited to individual cases and shall not infringe upon a student's right to written notice, opportunity for a hearing, and an appeal.

VI. Amending Procedures

A. Review and/or Revisions

At the request of any recognized constituency, the Vice Chancellor for Academic Affairs and Provost, or the Vice Chancellor for Student Affairs, the Chancellor or his/her designee shall appoint a committee to consider amendments to this Code. The committee shall consist of two undergraduate students, one graduate student, two faculty members, one academic dean, one representative from the University Housing Office, one representative from Student Judicial Affairs, and an ex officio representative from University Legal Counsel. The student and faculty members shall be designated by their appropriate constituencies. The Vice Chancellor for Student Affairs shall appoint a chair for the committee who may be one of the members listed above.

B. Amendments

The Chancellor may propose to the President amendments to the Code. Whenever the circumstances allow, due consideration shall be given to the recommendations of the committee provided for in the preceding paragraph. Amendment will be accomplished by the regular procedures for amendment of University policy.

C. Notification

Any amendment of the Code shall become effective only after general notice of such change has been given to the student body, faculty, and administrative staff. General notice shall include, but not be limited to, public notification of approved amendments twice successfully published in the *Daily Egyptian* in their entirety within seven days after approval of said amendments by the President.

Academic Grievances Policy/Procedures

Graduate Student Academic Grievance Policy

Graduate students at SIUC shall have the right to appeal for redress of grievance through established channels under the conditions stated below. Access to these channels is restricted to complaints by graduate students alleging that some member of the university community has caused the student to suffer some specific harm related to a matter within the authority of the dean of the Graduate School. Grievances which have been brought to a hearing under another campus grievance procedure shall not be brought to a hearing under this procedure.¹

With respect to students' complaints alleging capricious grading, the following guidelines shall apply: Instructors are expected to evaluate student work according to sound academic standards. Equal demands should be required of all students in a class, and grades should be assigned without departing substantially from announced procedures. It is the instructor's prerogative to assign grades in accordance with his/her academic/professional judgment, and the student assumes the burden of proof in the appeals process. Grounds for appeals include: (1) the application of non-academic criteria in the grading process, as listed in the University's non-discrimination and affirmative action statements: race, color, sex, national origin, religion, age, sexual orientation, marital status, or handicap; (2) the assignment of a course grade by criteria not directly reflective of performance relative to course requirements; (3) the assignment of a course grade by standards different from those which were applied by the instructor to other students in the course.

GRADUATE STUDENT ACADEMIC GRIEVANCE PROCEDURE

A graduate student seeking redress through grievance must first attempt to resolve the matter informally by contacting the party against whom redress is sought (respondent). If the dispute is not resolved at this stage, the student should contact the respondent's departmental chair or another appropriate mediator, such as the university ombudsman, who will attempt to resolve the dispute.

In the event that the dispute is not resolved informally, a graduate student may ask for and receive a hearing before a departmental academic grievance committee. [Such a grievance will be governed by the procedures established by the academic unit in which the complaint arose. In the event an academic unit has not established such procedures, the procedures outlined below shall govern the grievance.]

Departmental Grievance Procedure

FILING A GRIEVANCE

A graduate student desiring a hearing before a grievance committee of an academic department must submit a written request to the chair of the department no later than 30 calendar days² after the beginning of the semester following the incident in question, excluding summer term. A student may request an exten-

¹Cases involving academic dishonesty will be handled according to the Student Conduct Code. Separate grievance procedures exist for cases covered by the University Policy on Sexual Harassment, the Policy Accommodating Religious Observances of Students, the Policy on the Release of Student Information and Access to Student Records at Southern Illinois University, the Policy on Immunization of Enrolled Students, the Policy on the Determination of Residency Status, and the University's response to comply with *Americans with Disabilities Act*. These procedures are published in the *Undergraduate Catalog*. Graduate students employed as student workers are covered by a student worker grievance procedure, which is administered by the Financial Aid Office.

²Hereafter, "day" refers to calendar day, unless defined otherwise.

sion of the deadline in writing by petitioning the department chair. In the event that informal proceedings are continuing toward resolution, such a request shall normally be granted.

The request for a hearing must state the following:

1. Name of the grievant.
2. Program in which the grievant is enrolled.
3. Name of the grievant's major adviser.
4. Name and title of the person(s) against whom the grievance is being filed.
5. Current address and phone number of the grievant.
6. Statement of the grievance including descriptions of the incident(s) involved, date(s) of occurrence, what remedy is being sought, as well as any supporting documents.

DEPARTMENT ACTION ON GRIEVANCE

Upon receiving a written request for a hearing regarding an academic grievance, the department chair shall send the respondent a copy of the grievance, who will provide the chair with a written response within a reasonable time as stipulated by the chair. The chair shall then forward the grievance and response to the department graduate student grievance committee.³

The department chair shall notify the parties of the identity of the individuals who have been selected to serve on the grievance committee. The participation of any committee member may be challenged for cause. If the department chair determines that the challenge is valid, she/he shall name a substitute.

The committee chair shall request of both parties copies of any documents and a list of witnesses they wish to introduce. These should be submitted without delay. The committee chair shall convene a hearing within 20 days of receipt of the substantiating documents. These documents shall be available to both parties at least five days prior to the hearing.

The hearing shall be conducted by the committee according to the hearing procedures which are outlined in the Appendix.

In the absence of compelling circumstance, the committee shall make its recommendation on the grievance to the department chair within 10 working days after the conclusion of the hearing.

The department chair shall decide to accept or reject the committee's recommendations and render a decision on the grievance promptly. The decision and the reasons for it shall be submitted to the parties, the committee members, and the collegiate dean at the same time.

The department chair shall advise the parties of their right to appeal to the dean of the Graduate School. Hearings of appeals will not be automatically granted. Dissatisfaction with the decision shall not be sufficient grounds for appeal. The appellant must demonstrate that the decision at the department level was in error.

³Department Graduate Student Grievance Committee: A department graduate student grievance committee will be advisory to the department chair and will submit its findings to the department chair. The committee shall consist of three members. The department chair may designate an existing department committee to serve in such a capacity (subject to the qualifications listed herein), or may appoint an ad-hoc graduate student grievance committee. The members of the committee shall be appointed wherever possible from the department/unit in the college in which the grievance arose. Of those three members, two shall be appointed from the senior graduate faculty and one shall be appointed from the graduate student body upon consultation with the leadership of the department graduate student organization. A department graduate student grievance committee shall meet and elect its chair from among its graduate faculty membership. Any faculty member involved in the dispute shall not be appointed to the grievance committee.

Appeals of Department Decisions to the Graduate School

FILING AN APPEAL

If a graduate student wishes to appeal a decision of the department she/he must file a written appeal with the dean of the Graduate School within 30 calendar days of receipt of the department decision. The appeal must state the following:

1. Name of the appellant.
2. Program in which the appellant is enrolled.
3. Name of the appellant's major adviser.
4. Name and title of the person(s) against whom the original grievance was filed.
5. Current address and phone number of the appellant.
6. Copies of the original statement of grievance, the response by the person against whom it was filed, supporting documents, as well as a statement of what remedy is being sought.
7. Summary of grievance proceedings held at the department level and the decision(s) rendered at that time.
8. Statement of why the previous decision may be in error.

The dean will promptly forward the material to the coordinator of the Student Appeals Committee of the Graduate School (SAC)⁴. The SAC coordinator will solicit a reply to the appeal from the respondent. The coordinator will then promptly forward all materials to the committee members and will convene the committee at the earliest opportunity. The committee will decide by simple majority whether or not a hearing should be held. If a hearing is not granted, the coordinator shall forward all materials to the dean of the Graduate School and inform both parties of the reasons for the denial. If a hearing is granted the SAC coordinator shall request from the Graduate Council a list of graduate faculty members and from the Graduate and Professional Student Council a list of graduate students available to serve as hearing panel members. These persons may not be members of the same college as the parties to the grievance. The coordinator shall appoint a panel of three graduate faculty members and two graduate students and so notify the parties to the grievance. Panel members may be challenged for cause and, if the coordinator determines the challenge to be valid, she/he will name substitute(s) from the lists. The panel selects its own chair.

Procedures of the Student Grievance Committee of the Graduate School

Upon formation of the hearing panel, the SAC coordinator shall forward all materials to the hearing panel chair. The chair shall convene a hearing within 30 days.

The hearing shall be conducted by the hearing panel according to the procedures listed in the Appendix, with the exception that new evidence and testimony may be introduced only at the discretion of the panel. The hearing at this level will be limited to the bases of the appeal itself. New evidence will not normally be permissible.

The committee shall make its recommendation on the appeal to the dean within 10 working days after the conclusion of the hearing. The dean of the Graduate School shall decide to accept or reject the committee's recommendations and render a decision on the grievance promptly. The decision and the reasons for it shall be submitted to the parties, the hearing panel members, and the department chair.

⁴Student Appeals Committee of the Graduate School: The Educational Policies Committee of the Graduate School shall elect annually from its membership the Coordinator of the SAC who will select three members of the Graduate Council (two faculty members, one student) to form a SAC as needed.

All records of the appeal and hearing shall be deposited with the Graduate School upon completion of the hearing panel's work.

Appendix A

HEARING PROCEDURES

1. The principal parties to the grievance shall have the right to be accompanied by an adviser of their choice. The advisers may speak on behalf of their clients only with the approval of the committee.
2. All hearings shall be open unless either of the parties requests that the hearings be closed. If the hearing is closed, only the parties, their adviser, and the committee shall be present during the taking of evidence. Witnesses for either party shall be present only while giving testimony if the hearing is closed.
3. All hearings shall be tape recorded. The tape recording will be deposited in the office of the department chair at the conclusion of the hearing.
4. Each party may call witnesses to present evidence. Each party shall have the right to examine any witness called by the opposing party. If a witness is unable to appear the committee may allow written statements. If the presence of a witness is required to ensure fairness to all parties, the hearing may be continued until such witness is physically able to attend the hearing.
5. The committee will decide all matters, procedural and substantive, by simple majority vote.
6. Each party may make an opening and a closing statement.
7. Decisions by the panel will be based on a preponderance of the evidence.

Graduate School Procedures for Charges of Academic Dishonesty Leading to Possible Rescission of Degree

INTRODUCTION

Charges against a former student relating to acts of academic dishonesty in the submission of graduate degree requirements shall be handled to the extent feasible under the SIUC Student Conduct Code procedures applicable to charges relating to academic dishonesty. The dean of the Graduate School has the responsibility for the formal resolution of charges involving academic dishonesty in Graduate School programs. Since the Student Conduct Code procedures are not in all respects applicable to charges involving an individual no longer enrolled in the University, the following supplemental procedures will be followed for adjudicating such charges.

NOTIFICATION OF CHARGES

Charges against a former student involving allegations of academic dishonesty in the completion of graduate degree requirements shall be initiated by the dean of the Graduate School by letter to the individual, sent certified mail/return receipt requested, stating the specific charges, and the date, time, and place for the hearing, and enclosing a copy of the Student Conduct Code and these procedures. The charge letter shall be mailed no less than 20 business days in advance of the date of the the hearing.

HEARING AGENT

Charges shall be heard by a five-member hearing committee, the members of which shall be appointed from those colleges/schools having graduate programs. Of the five members, three shall be appointed from the graduate faculty and two shall be appointed from the graduate student body. The dean will seek nominations for a committee hearing a case from the Graduate and Professional Student Council for the graduate student members, and from the Graduate Council for the graduate faculty members. The committee will be demographically repre-

sentative of the University insofar as possible. The academic unit from which the charge arose will not have a member appointed to the hearing committee. Once a hearing committee is constituted it shall meet and elect its own chair from among its graduate faculty membership. The individual charged shall have the right to challenge membership of the hearing committee as provided in the Student Conduct Code.

HEARING PROCEDURES

Hearings shall be conducted in accordance with the formal disciplinary procedures set forth in the Student Conduct Code. In addition, the following procedures shall govern the conduct of the hearing.

1. The individual charged shall have the right to be accompanied by an adviser of his/her choice. An adviser will be permitted to advise the individual in the hearing, and to speak on behalf of the individual and cross-examine witnesses with the consent of the hearing committee.
2. The dean of the Graduate School and the individual charged shall provide to the hearing committee a list of witnesses to be called and copies of any documents which they seek to introduce into evidence at the hearing. The committee chair will furnish copies of these to the other party. Such witness list and documents shall be provided to the hearing committee not less than 10 business days prior to the date scheduled for the hearing, and to the parties not less than 5 business days before the date of the scheduled hearing.
3. All hearings shall be closed unless the individual charged requests that it be open. If the hearing is closed, only the parties, their adviser, and the committee members shall be present during the taking of evidence. Witnesses for either party shall be present only while giving testimony.
4. All hearings shall be tape-recorded. The tape-recording will be submitted along with the entire case record and the committee's findings and recommendations to the dean of the Graduate School following conclusion of the hearing.
5. Each party may make an opening statement before the presentation of any evidence and a closing argument following the conclusion of all evidence.
6. The charges against the individual and witnesses testifying in support thereof shall be presented first. The individual charged shall have the right to respond to the charges and present witnesses and evidence in his/her own behalf.
7. Each party shall have the right to ask questions of any witness called by the other party. Members of the committee may also question witnesses.
8. Written statements in lieu of personal testimony may be used only with permission of the committee and only in the event a witness is physically unable to attend the hearing. The opposing party shall be given notice at least three days prior to the commencement of the hearing of the fact that an individual will not be physically present to give testimony and so that objection may be made to the use of written statements. If the committee determines that the actual presence of the witness is required to insure fairness to all parties, the hearing may be continued until such witness is physically able to attend the hearing.
9. The hearing committee will decide all matters, procedural and substantive, by simple majority vote.
10. In the absence of compelling circumstances, the committee shall make findings and recommendations on the charges to the dean of the Graduate School within 15 business days after the conclusion of the hearing. The dean of the Graduate School shall render a decision, absent compelling circumstances, within ten business days after receipt of the committee's findings and recommendations. The decision and the reasons therefore shall be

submitted to the individual charged by certified mail, return receipt requested, and to the committee chair. If the dean determines that additional evidence is necessary to decide the matter(s), the dean may remand the matter to the committee for the taking of further evidence, and in doing so, may limit the issues on which additional evidence may be taken. When a matter is remanded to the committee, the committee shall follow the procedures set forth above.

SANCTIONS

Sanctions which may be imposed include the completion of any additional academic requirements deemed necessary for continued holding of the degree, or, if it is found that the degree was improperly awarded because of academic dishonesty on the part of the former student in the submission of degree requirements, a recommendation that the degree be rescinded. A recommendation that a degree be rescinded will be made to the chancellor through the vice chancellor for Academic Affairs and Provost, and will require final action by the Board of Trustees of Southern Illinois University.

APPEAL

If the individual is not satisfied with the decision of the dean, a written argument stating the reasons for such dissatisfaction may be submitted to the vice president for Academic Affairs and provost within ten business days after the date that delivery of the decision was tendered by the U.S. Postal Service to the individual. Such written argument shall be attached to the dean's decision and remain therewith throughout the remainder of the process.

Retention

Any graduate student whose grade point average falls below 3.00 will be placed on academic probation. Faculty of a degree program-unit may determine its own grade point average requirements (above the grade point minimum for retention in their particular program.) All 400- and 500-level courses taken after a student is admitted to the Graduate School are considered graduate level, unless the course is specifically designated, Not for graduate credit, for all students. Grade point averages for doctoral students are based on graduate credit work completed at SIUC after admission to the doctoral program. Grade point averages for master's degree students and unclassified graduate students are based on all graduate credit work completed at SIUC.

Any graduate student on academic probation whose grade point average remains below 3.0 for two consecutive semesters in which she or he is enrolled, excluding summer sessions, will be permanently suspended from the Graduate School, unless the department and the collegiate dean petition the graduate dean for an exception.

Graduation

Graduation ceremonies are held each year at the end of the spring semester and the summer session. Degree candidates must apply for graduation with the Office of Admissions and Records by no later than the end of the first week of the spring semester or summer session in which the student plans to graduate. Candidates who plan to complete requirements at the end of the fall semester will have an extended application time. Please contact the Graduate School for deadline dates. Although there is no ceremony at that time, degree candidates

who complete requirements will be issued a December diploma and will have the option of participating in the May graduation ceremony.

Graduation application forms are available in the Office of Admissions and Records and may be obtained by mail by writing that office.

A \$15 graduation fee is established for all persons receiving degrees. The fee is payable at the time of application or the fee will be charged to the student's account. The fee does not cover the rental fee for the cap, gown, and hood, or the cost of the invitations. These items are ordered through the University Book Store in the Student Center and questions regarding them should be referred to the University Book Store. Doctoral students are also required to pay a fee of \$60.00 to cover the cost of publication of the abstract and microfilming of the dissertation.

Final, approved copies of research reports, theses, field studies, special project reports, and dissertations are due in the Graduate School office not later than three weeks before graduation. Doctoral students must also submit the microfilming agreement form and the survey form of earned doctorates at the time the dissertation is submitted.

Although attendance at commencement is not compulsory, students who wish to graduate in absentia must notify the Graduate School in advance. This information is needed for seating arrangements and for mailing purposes.

Posthumous Degrees

A graduate degree may be awarded posthumously if, before the student's death, work for the degree had substantially been completed. This determination shall be the responsibility of the graduate dean in consultation with the administrative officers and faculty of the degree program in which the student had been enrolled.

Release of Student Information and Issuance of Transcripts

The University follows a policy for release of student information in compliance with federal regulations. More specific information may be obtained from the Office of Admissions and Records or from the Graduate School.

A transcript of the student's official educational record is issued by the Office of Admissions and Records under the following conditions: a transcript is sent, issued, or released only upon a student's request or explicit permission, except that such permission is not required when the University faculty and administrative officials or other educational institutions request transcripts for official purposes.

In addition, requests will be honored from a philanthropic organization financially supporting a student and from a recognized research organization conducting educational research provided the confidentiality of the transcript is protected. One transcript will be issued directly to a student upon request. The transcript will have the statement, *Issued to the Student*, stamped on its face. Transcripts will be sent without charge to recipients other than the student as requested by the student. A transcript will not be sent, issued, or released if a student owes money to the University as verified by the Bursar's office.

University Policy Concerning Sexual Harassment

Southern Illinois University at Carbondale is committed to creating and maintaining a community in which students, faculty, and staff can work together in

an atmosphere free of all forms of harassment, exploitation, or intimidation. Sexual harassment, like harassment on the basis of race or religion, is a form of discrimination expressly prohibited by law. It is a violation of Title VII of the federal Civil Rights Act of 1964 and Title IX of the Educational Amendments of 1972 and a civil rights violation of the Illinois Human Rights Act.

In addition to being illegal, sexual harassment runs counter to the objectives of the University. When people feel coerced, threatened, intimidated, or otherwise pressured by others into granting sexual favors, or are singled out for derision or abuse because of their gender, their academic and work performance is liable to suffer. Such actions violate the dignity of the individual and the integrity of the University as an institution of learning. Academic freedom can exist only when every person is free to pursue ideas in a non-threatening, non-coercive atmosphere of mutual respect. Sexual harassment is harmful not only to the persons involved but also to the entire University community.

The University will take whatever action is needed to prevent, stop, correct, or discipline behavior that violates this policy. Disciplinary action may include, but is not limited to, oral or written warnings, demotion, transfer, suspension, or dismissal for cause.

Definitions and Examples

Sexual harassment is defined as unwelcome sexual advances, requests for sexual favors, verbal or other expressive behaviors, or physical conduct commonly understood to be of a sexual nature, when:

- a. submission to, or toleration of, such conduct on or off campus is made, either explicitly or implicitly, a term or condition of instruction, employment, or participation in other University activities;
- b. submission to, or rejection of, such conduct is used as a basis for employment or for academic decisions or assessments affecting the individual's status as an employee or student; or
- c. such conduct has the purpose or effect of unreasonably interfering with an individual's status as a student or employee or creates an intimidating, hostile, or offensive work or educational environment.

Sexual harassment may involve the behavior of a person of either sex toward a person of the opposite or the same sex. Examples of behavior that would be considered sexual harassment include, but are not limited to, the following:

- a. physical assault;
- b. direct or implied threats that submission to sexual advances will be a condition of employment, work status, promotion, grades, or letters of recommendation;
- c. a pattern of conduct, annoying or humiliating in a sexual way, that includes comments of a sexual nature and/or sexually explicit statements, questions, jokes, or anecdotes;
- d. a pattern of conduct that would annoy or humiliate a reasonable person at whom the conduct was obviously directed. Such conduct includes, but is not limited to gestures, facial expressions, speech, or physical contact understood to be sexual in nature or which is repeated after the individual signifies that the conduct is perceived to be offensively sexual.

Consenting Relationships

Consenting romantic and/or sexual relationships between a faculty member and a student or under the faculty member's academic supervision, or between a supervisor and an employee are inappropriate and unprofessional behavior and should not occur. Taking note of the respect and trust accorded a professor by a student and of the power exercised by the professor, a relationship between a faculty member and a student should be considered one of professional and client, in which sexual relationships are inappropriate. A similar relationship

exists between a supervisor and an employee. The power differential inherent in such relationships may compromise the subordinate's free choice. Others may view such a relationship as one of preferential treatment and detrimental to themselves or others. A faculty member or supervisor who enters into a sexual relationship with a student or an employee, where a professional power differential obviously exists, must realize that if a charge of sexual harassment is subsequently lodged, the burden will be on the faculty member or supervisor to prove immunity on grounds of mutual consent.

Relationships between a graduate student and an undergraduate, when the graduate student has some supervisory responsibility for the undergraduate, belong in this category. Among other relationships included are those between a student or employee and administrator, coach, adviser, program director, counselor, or residential staff member who has supervisory responsibility for that student or employee.

Protection of the Complainant and Others

No student, faculty member, or staff member may be subjected to any form of reprisal for seeking information on sexual harassment, filing a sexual harassment complaint, or serving as a witness in a proceeding involving a complaint of sexual harassment. Any retaliatory action will be a violation of this policy and will be grounds for disciplinary action. Individuals who believe they have been subjected to reprisal for their participation in a sexual harassment complaint may use the procedures of this policy to seek redress.

Protection of the Accused

Accusations of sexual harassment are grievous and can have serious and far-reaching effects on the careers and lives of accused individuals. Allegations of sexual harassment must be made in good faith and not out of malice. Individuals who believe they have been falsely accused of sexual harassment may use the procedures of this policy to seek redress.

Responsibility of Supervisors

Supervisory personnel are charged with maintaining an atmosphere that discourages sexual harassment and ensuring that the University policy is enforced in their areas. Supervisors are directed to discourage all behavior that might be considered sexual harassment and to respond promptly to sexual harassment complaints. University officials who knowingly condone incidents of sexual harassment or instances of reprisal for reporting such complaints will be subject to disciplinary action.

Role of Human Resources

The chancellor has assigned responsibility for the administration of this policy to the director of Human Resources who will disseminate the policy to the University community, devise education and training programs, maintain centralized records of sexual harassment complaints, oversee the grievance process, coordinate the resolution of complaints, and evaluate the effectiveness of the complaint resolution procedures and related educational programs.

External Agency Complaint Procedures:

A summary description of the legal recourse, investigative and complaint process available through the Illinois Department of Human Rights and the federal Equal Employment Opportunity Commission may be found in Appendix B. Additional information about the procedures of these agencies is available from Human Resources. Also, Appendix B may be obtained from Human Resources.

Campus Resources

The names of the sexual harassment information advisers are available from: *University Directory* listed in the Office Directory section under Sexual Harassment Information Advisers

University Affirmative Action Office, Anthony Hall 104, 618-536-6618

University Ombudsman, Woody Hall C302, 618-453-2411

Human Resources, 805 S. Elizabeth St., 618-453-6689

For assistance in informal complaint resolution on campus, contact:

University Affirmative Action Office, Anthony Hall 104, 618-536-6618

University Ombudsman, Woody Hall C302, 618-453-2411

To file a complaint on campus, contact:

Director of Human Resources, 805 S. Elizabeth St., 618-453-6689

The supervisor of the individual you are complaining about.

Off Campus Resources

Department of Human Rights

222 S. College Street

Springfield, Illinois 62704

(217) 785-5100

T.D.D. (217) 785-5125

Human Rights Commission

William G. Stratton Office Bldg., 4th Fl.

Springfield, Illinois 62704

(217) 785-4350

State of Illinois Center

100 W. Randolph St., 5th Fl.

Chicago, Illinois 60601

(312) 814-6200

T.D.D. (312) 263-1579

State of Illinois Center

100 W Randolph St., 10th Floor

Chicago, Illinois 60601

(312) 814-6269

EEOC

Central West Plaza Building

625 Euclid Street, 4th Floor

St. Louis, Missouri 63108

(314) 425-6545

EEOC

536 S. Clark Street

Chicago, Illinois 60605

(312) 353-2713

Academic Resources

Library Affairs

The extensive holdings and wide array of bibliographic and instructional support services offered by SIUC's Morris Library place it among the foremost research institutions. The library is a longtime member of the Association of Research Libraries and also holds membership in the Center of Research Libraries in Chicago. It is an active participant in the world's largest bibliographic network, OCLC (Online Computer Library Center), and is a member of ILLINET Online (IO), the statewide automated catalog, circulation, and interlibrary loan system with records of over 600 libraries.

The library's general collection numbers 2.4 million volumes, 3.1 million microforms, and over 12,200 current serial subscriptions. Library users have access to nearly 900 electronic data files and CD-ROM products via multiple workstations located throughout the building. Up to date information about library services is available via the LINKS (Library Information NetworKS) component of the campus-wide computer network.

The library's many noteworthy holdings include: depository collections of federal, state, and United Nations documents; and an Instructional Materials Center which includes current and historical children's literature, textbooks, and

audiovisual teaching aids. Also part of Library Affairs is the Ulysses S. Grant Association's editorial project to publish the complete correspondence of President Grant.

Among the library's major administrative units, Reference Services and Collection Management comprises four subject divisions (Education and Psychology, Humanities, Science, and Social Studies), and the Undergraduate and Instructional Services unit which provides materials designed to meet the special needs of undergraduates, including a self-instruction center and reserve collection. The library also offers faculty members a host of instructional development, research, and evaluation services including multi-media training and development, as well as video materials and photographic and graphic production services. The Distance Learning initiatives for the southern Illinois area have their headquarters in Morris Library.

The Special Collections and Development unit consists of historical and literary manuscripts, the rare book collection, and the University Archives. Special Collections contains important research materials in American and British expatriate literature; twentieth century philosophy, including the papers of John Dewey and the archives of the Open Court press; the Irish literary renaissance, First Amendment freedoms, and proletariat theater. Among other library services, the Technical and Automation Service unit updates information in the on-line catalog and assists library users by providing access to, and identifying, borrowing, and delivering materials from other libraries. It is responsible for LINKS and all of the library's other electronic services.

Information Technology

Faculty and staff are encouraged to have desktop computers for their needs. To assist faculty and staff in the achievement of instruction, research, service, and administrative goals and objectives of the University, SIU's network infrastructure provides network-based information resources to desktops by Unix-based RISC servers, an IBM mainframe (ES/9021-500 with vector processor), and three public learning centers with instructional labs equipped with a variety of microcomputers. The network at SIUC currently includes over 25 buildings. The expansion of the fiber optic network to buildings on the SIUC campus is designed to provide for data transmission, compressed digital video, and full motion video, empowering faculty to enhance teaching with computer teaching with computer and video projection. The technology infrastructure, based primarily on support of the campus backbone network and its peripheral technologies, enables the creative delivery of instruction, research, and community service. The network connects work groups and departmental microcomputers or workstations for electronic interchange.

SIUnet, SIUC's communications network, with over 5,000 interactive devices, provides access to on and off campus computing resources as well as to regional and international resources through BITNET, netILLINOIS/CICNET access to the Internet, the worldwide collection of interoperable computer networks, and ADVANTIS (a commercial value added network).

A Campus Wide Information System network-based Unix server provides specific information about services and resources available at SIUC. CWIS links research faculty and students to library resources, local, regional, and international information sources, specialized network-based servers such as electronic mail, access to Unix computational resources, and various statistical libraries. Data storage systems are also provided. These resources are available from local area networks and through dial-up facilities.

The academic and research needs of faculty and students are supported with a full range of compilers, statistical packages, graphics software, word processing, electronic mail, and network facilities. Computer services and support are avail-

able on-line to the University academic, research, and administrative communities on a 24-hour, seven-day per week basis.

Research and Service Centers

THE CENTER FOR ARCHAEOLOGICAL INVESTIGATIONS

Closely associated with the Department of Anthropology, the Center for Archaeological Investigations has research activities in the American Midwest, Caribbean, Guatemala, Mexico, Peru, and the western Pacific. Funding is provided by state and federal agencies, and private institutions. The center also conducts archaeological research for firms and government agencies which are required to comply with environmental and antiquities laws. The center conducts an annual field school, and provides thesis and dissertation data, and research opportunities for numerous students of archaeology. The center also curates a large collection, representing over 30 years of research.

CENTER FOR ENVIRONMENTAL HEALTH AND SAFETY

This center is responsible for facilitating and monitoring assurances of university wide compliance to policies and guidelines of the University, state agencies, Environmental Protection Agency, Nuclear Safety Agency, Occupational Health and Safety, and National Institute of Health, with respect to human health and safety.

COAL RESEARCH CENTER

The Coal Research Center assists in the development and implementation of research education and service activities related to the extraction and utilization of coal. Established in 1974, the center has worked to advance the application of new technologies in mining and power production and to identify new uses and markets for Illinois coal. Research relating to surface mine reclamation, mine subsidence, coal desulfurization, coal characterization, combustion, gas cleanup and environmental policy have been conducted at SIUC. Faculty and students from such diverse fields as engineering and technology, science, business, education, law, and agriculture have contributed to the University's international reputation in energy and environmental research.

The center administers the Illinois Mining and Mineral Resources Research Institute and the National Mine Land Reclamation Center—Midwestern Region, and since 1990 it has managed the Illinois Coal Development Park at SIUC's Carterville Campus in cooperation with the Illinois Department of Commerce and Community Affairs. Efforts at the Coal Development Park have targeted technologies that promise near term commercial acceptance by coal producers and users. Technologies developed here include coal cleaning, refining, combustion, air emission reduction and solid combustion residues utilization.

The center also operates a unique program that offers industry improved dragline safety and productivity. The Dragline Productivity Program offers computer-based instruction and hands-on simulator experience for operators and supervisors from mining operations around the world.

COOPERATIVE WILDLIFE RESEARCH LABORATORY

Since its founding in 1951, the laboratory has achieved a distinguished record training graduate students in basic and applied principles of vertebrate ecology and wildlife biology. It is the only such comprehensive program in Illinois, and it is recognized as among the premier programs in the nation. Independent, cooperative, and collaborative research supported by industry, foundations, and state and federal agencies lead to better understanding and management of natural resources. The laboratory has pioneered in the reclamation and enhancement of mined lands for the benefit of various resources; and, the current efforts provide unique research and training opportunities. Other areas of ac-

knowledgeable laboratory expertise include the biology and ecology of game, endangered, and nongame wildlife; land use and the impact on wildlife resources; wildlife and environmental toxicology; waterfowl/wetland ecology and the epidemiology of zoonotic and other diseases in wildlife. More than 20 projects directed by laboratory staff currently afford graduate fellows and research assistants broad and varied research opportunities. These activities exceed \$500,000 each year in contracts and grants, resulting in significant contribution to academic needs of students and staff and requests for service by state, federal, and private agencies.

COOPERATIVE FISHERIES RESEARCH LABORATORY

Graduate research in fisheries is conducted through the Fisheries Research Laboratory. Graduate study in fisheries, culminating in the Master of Science or Doctor of Philosophy degree, is offered in the Department of Zoology. In addition to a wide variety of support courses, ten fisheries courses are taught. Research activities include studies in both fish management and aquaculture. Emphases include warmwater, coolwater, and coldwater fishes native to Illinois. There are also opportunities to work with exotic species of fishes and shellfishes, both freshwater and marine, particularly through the international fisheries program. Some of the areas of research stressed are trophic ecology, water quality, pond culture, tank culture, polyculture, culture system development, nutrition, fish physiology, fish genetics, utilization of nursery areas, introduction of forage fishes as a management tool, introduction of non-native sport fishes, ecology of larval fishes, age and growth studies, introduction of hybrid fish species, utilization of power plant cooling lakes, and population dynamics. Facilities in the Fisheries Research Laboratory include offices, well equipped laboratories, aquarium rooms, culture ponds, a greenhouse for hydroponic and recirculating water system studies and an 8,300 square-foot wet-laboratory building and a 90-pond research/demonstration facility.

THE MATERIALS TECHNOLOGY CENTER

The Materials Technology Center was established in 1983 as a result of a high-technology thrust by the state of Illinois. Charged with stimulating materials-related research on the campus of SIUC, the center accomplishes this mission through initiating interdisciplinary research in the colleges of engineering and science, conveying results to industrial partners and sponsoring international technical conferences and seminars. The center encourages research in new areas by administering a competitive grant program that funds start-up projects for faculty entering new areas of materials research and provides technical, administrative and financial support to start-up and established research programs.

A historical strength of the center has been research in the area of carbon-carbon composites. Regarded as a national leader in characterization and fabrication, the center has expanded its leadership and expertise in carbon science to include studies in areas such as fullerenes and development of carbon material precursors.

Research programs in electrorheological fluids, catalysis, magnetic materials, superconductivity, reinforced civil engineering structures (geotextiles and geomembranes), plastic matrix composites, chemical vapor infiltration and plasma induced deposition techniques represent the diverse nature of materials research supported by the center.

Under the guidance of established experts, students associated with MTC receive hands-on training and valuable experience. The total program of the center offers an opportunity for students at all levels of experience to train in the materials science field.

Research Shops and Services

The services of the Office of Research Development and Administration's (ORDA) centralized research support facilities are available to faculty, staff, and students at minimal cost. The *Center for Electron Microscopy* provides training, technical service, and research for faculty and students in the use of electron and light microscopes. The *Nuclear Magnetic Resonance (NMR) Facility*, a centralized NMR lab for teaching and research, houses Varian VXR-500 and VXR-300 systems. The *Research Photography and Illustration Facility* offers consultation and technical assistance to those in need of scientific photography or illustration as an integral part of their research endeavors. The central animal facility, or *Vivarium*, is directed by a veterinarian with specialty training in laboratory animal medicine to ensure proper and humane care of research animals. The *Central Research Shop* designs, constructs, and repairs special equipment demanding medium and large machining capabilities. The *Fine Instruments Research Shop* designs, fabricates, and repairs sophisticated mechanical, opto-mechanical, and electro-mechanical instruments. The *Research Glassblowing Facility* designs and fabricates unique scientific glassware and repairs glassware.

Office of Research Development and Administration

The Office of Research Development and Administration (ORDA) offers a number of services for faculty, staff, and students who wish to submit grant applications to funding agencies. Graduate students seeking funding for their research projects (dissertation support, research fellowships, travel grants, etc.) should visit the ORDA Resources Library (Woody Hall C-214), which contains a wide range of information on governmental agencies, private foundations, and other sources of grant funding. ORDA also publishes a brochure for graduate students that explains the process of seeking grant funding. This publication, along with a host of other research- and grant-related information, also appears on ORDA's electronic bulletin board ("Research Assistance and Grants") on the Campus Wide Information System.

The ORDA staff is available for consultation and assistance in preparing grant proposals and budgets. ORDA also works with researchers in negotiating grant/contract award agreements, processing awards, and handling invention disclosures.

One of ORDA's responsibilities is to ensure that research conducted at SIUC complies with all applicable federal and funding-agency regulations. Funded or unfunded research that will involve any of the following—human subjects (including administering questionnaires, conducting interviews, or accessing confidential databases), research animals, radiological materials, hazardous biological materials, recombinant DNA, or hazardous waste—must have clearance **before** the research project begins. Students should consult ORDA (618-453-4540) or their graduate advisor for guidance. (See related information in section on Student Responsibility elsewhere in this chapter).

Accreditations

The Graduate School, as a part of SIUC, is fully accredited by the North Central Association of Colleges and Secondary Schools. Other accreditations and affiliations include:

Accreditation Board for Engineering and Technology, Inc.

Accreditation Council of the American Assembly of Collegiate Schools of Business (undergraduate and master's level programs)

American Association for Accreditation of Laboratory Animal Care

American Association of Museums American Bar Association

American Chemical Society

American Council on Education in Journalism and Mass Communication

American Dietetic Association

American Psychological Association (Counseling and Clinical Psychology)

American Speech-Language-Hearing Association, Educational Standards Board

Association of American Law Schools

Association of Research Libraries

Commission on Accreditation of Rehabilitation Institutes (Evaluation Development Center)

Council for Accreditation for Counseling and Related Educational Programs (CACREP)

Council on International Educational Exchange

Council on Rehabilitation Education (Rehabilitation Counseling Program)

Council on Social Work Education

Federal Aviation Administration (Aviation Maintenance Technology, Aviation Flight, Avionics Technology, and the Airway Science Curriculum)

Federation of Schools of Accountancy

Illinois Alcohol and Other Abuse Professional Certification Association, Inc.

Illinois State Board of Education

Superintendent of Education

State Teacher Certification Board

Liaison Committee on Medical Education of the American Medical Association and Association of American Medical Colleges

National Academy of Early Childhood Programs

National Athletic Trainers Association

National Association of Schools of Art and Design

National Association of Schools of Music

National Association of Schools of Public Affairs and Administration

National Association of Schools of Theatre

National Council for Accreditation of Teacher Education

National Recreation and Parks Association (National Accreditation Council)

Society of American Foresters

University Council for Vocational Education

Western Association of Schools and Colleges

Associations

CENTER FOR ADVANCED RADIATION SOURCES

The University is a member of the Center for Advanced Radiation Sources (CARS), a research consortium composed of Northern Illinois University, the University of Chicago, and Southern Illinois University at Carbondale. Membership with CARS provides access to the facilities being developed at the Advanced Photon Source sited in Illinois and facilities at other federal laboratories.

COUNCIL OF GRADUATE SCHOOLS OF THE UNITED STATES AND CANADA

The University is a regular member of the Council of Graduate Schools (CGS) of the United States and Canada. CGS was established to provide graduate schools with both a comprehensive and widely representative organization through which they can counsel and act together.

COUNCIL ON RESEARCH POLICY AND GRADUATE EDUCATION (CRPGE) IN THE NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND GRANT COLLEGES (NASULGC)

The Graduate School is an active member of this major research and graduate educational council of the largest association of public research universities in the United States.

NATIONAL COUNCIL OF UNIVERSITY RESEARCH ADMINISTRATORS

The National Council of University Research Administrators (NCURA) is an association of individuals involved in the administration of sponsored programs (research, education, and training) primarily at colleges and universities.

OAK RIDGE ASSOCIATED UNIVERSITIES

Since 1980, students and faculty of Southern Illinois University at Carbondale have benefited from its membership in Oak Ridge Associated Universities (ORAU). ORAU is a consortium of colleges and universities and a management and operating contractor for the U.S. Department of Energy (DOE) located in Oak Ridge, Tennessee. ORAU works with its member institutions to help their students and faculty gain access to federal research facilities throughout the country; to keep its members informed about opportunities for fellowship, scholarship, and research appointments; and to organize research alliances among its members.

Through the Oak Ridge Institute for Science and Education, the DOE facility that ORAU manages, undergraduates, graduates, postgraduates, as well as faculty enjoy access to a multitude of opportunities for study and research. Students can participate in programs covering a wide variety of disciplines including business, earth sciences, epidemiology, engineering, physics, pharmacology, ocean sciences, biomedical sciences, nuclear chemistry, and mathematics. Appointment and program length range from one month to four years. Many of these programs are especially designed to increase the numbers of underrepresented minority students pursuing degrees in science- and engineering-related disciplines. A comprehensive listing of these programs and other opportunities, their disciplines, and details on locations and benefits can be found in the *Resource Guide*, which is available by calling either of the contacts below.

ORAU's Member Services office seeks opportunities for partnerships and alliances among ORAU's members, private industry, and major federal facilities. Current alliances include the Southern Association for High Energy Physics, Pan American Association for Physics, Materials Science Forum, and international initiatives in support of the New Independent States and the republics of Central and Eastern Europe. Other activities include faculty development programs, such as the Junior Faculty Enhancement Awards and the Visiting Industrial Scientist Program, and various services to chief research officers.

For more information about ORAU and its programs, contact Dr. John H. Yopp, ORAU Council Member, at 618-453-4526; or contact Monnie E. Champion, ORAU Corporate Secretary, at 615-576-3306.

ORGANIZATION FOR TROPICAL STUDIES

Southern Illinois University at Carbondale is an institutional member of the Organization for Tropical Studies (OTS), a non-profit corporation organized for the purpose of establishing, fostering, supporting and conducting programs in education and research relating to the tropics; to establish, maintain, and operate facilities for these purposes; to publish the results of education and research; and to carry out other activities relating to the advancement of education and research in the tropics. Since its founding in 1963, OTS has become a significant force on the international scene, and it functions as a catalytic agent within Costa Rica and the U.S. scientific community. OTS continues to expand programming into environmental education and other areas where sound ecological knowledge can be used to address societal problems. OTS is the oldest consortium of U.S. universities dealing with tropical biology. It includes over 50 major institutions.

SOCIETY FOR RESEARCH ADMINISTRATORS

The University is a member of the Society for Research Administrators (SRA). Its membership includes administrators in industry, colleges and universities, nonprofit research organizations, hospitals, and government agencies. SRA is the premier international organization for research administrators.

Facilities and Services

Placement Services of University Career Services (UCS)

University Career Services provides services to students and alumni seeking job search assistance. Professional placement counselors are available to answer career related questions and to discuss placement procedures, job opportunities, resume writing, and interviewing techniques. UCS also works closely with employers in order to provide direct assistance in filling their job requirements. Inquiries concerning these services should be made to the University Career Services office in Woody Hall B208, or by calling 618-453-2391.

Housing

Residence Halls. Single and double occupancy housing is available in residence halls for single graduate students. Contracts for room and board are offered on a first come, first serve basis. A variety of meal options are also available.

Inquiries regarding on-campus residence halls should be sent to the Supervisor of Contracts, University Housing, Southern Illinois University at Carbondale, Carbondale, IL 62901-6716.

Family Housing. SIUC operates two apartment complexes for graduate students, married couples, and students with families. Southern Hills, on the southeast edge of campus, has efficiency, one-bedroom, and two-bedroom furnished apartments. Evergreen Terrace, on the southwest edge of campus, has two- and three-bedroom unfurnished apartments. Priority for two- and three-bedroom apartments are given to families with children.

Sixteen, furnished efficiency apartments are available for single graduate students at Elizabeth Apartments, 800 South Elizabeth Street, on the west edge of campus.

Contracts are offered to eligible applicants based on the date of application. Inquiries regarding family housing apartments should be sent to Family Housing, Southern Illinois University at Carbondale, Carbondale, IL 62901-6716.

Off-Campus Housing. Many types of rental units are available in Carbondale, including apartments, rooming houses, and mobile homes. Many of the off-campus complexes are within walking distance of the campus. A personal visit prior to contracting with a facility is recommended.

A listing of apartment complexes and mobile home parks in the Carbondale area is available by contacting Off-Campus Housing, Southern Illinois University at Carbondale, Carbondale, IL 62901-6716.

Parking on Campus

Students wishing to operate or park a motor vehicle on campus must apply for a parking decal at the Parking Division, Washington Square, Building B.

Office of Executive Assistant to the Chancellor for International and Economic Development

The office of Executive Assistant to the Chancellor for International and Economic Development (OIED) is responsible for developing and supporting faculty and staff in international programs and serving as a bridge between the University and the region, state, and nation in the area of economic development. The office administers International Development; International Programs and Services; the Office of Economic and Regional Development; Touch of Nature; Southern Illinois University at Carbondale in Niigata, Japan; Southern Illinois University at Chaing Mai, Thailand; Study Abroad, and Overseas Campus Programs.

Primary goals include increasing the numbers of externally funded grants and contracts in the international arena for SIUC; enhancing the economic climate of southern Illinois and the State through a program of economic development activities; increasing the programs and academic opportunities for clients at the Touch of Nature Environmental Center; and extending the SIUC-N overseas campus program concept to other areas of the world. OIED is located at 218 Anthony Hall. Southern Illinois University at Carbondale in Niigata, Japan, office is located in Small Business Incubator, room 208. Southern Illinois University at Chaing Mai, Thailand, office is located in Small Business Incubator, room 216.

Economic and Regional Development

The University established the Office of Economic and Regional Development (OERD) in 1986 as a means to improve the quality of life and economic climate in southern Illinois. Located in the award-winning Small Business Incubator south of campus at the intersection of Route 51 and Pleasant Hill Road, OERD administers the Incubator Program, the Center for Rural Health and Social Service Development, Regional Research and Service, Informational Services, and International Economic Development. OERD provides special programs in business training and scheduling, plus rentable space for business start-up and expansions needing in-depth assistance, reception, copy, FAX service and conference space.

Primary goals include creating, attracting, and expanding business and industry in Illinois; further developing the human resource potential within the public and private sectors of the region and state; and addressing the health care and social service issues impacting the lives and productivity of the citizens in this state and nation.

International Development

The International Development division provides University-wide leadership, coordination, and support for a wide variety of developmental activities. These activities include research and dissemination of information on external funding opportunities, maintenance of an international projects database and a resource library, development of grants and projects, coordination of international linkages and agreements, promotion of women in development activities, sponsorship of international development forums, and assistance with international visitors and protocol. Assistance also is provided in the exploration of project ideas, identification of funding sources, development of proposals, negotiation of contracts, and administration of externally funded activities.

The International Development division is located at 803 S. Oakland (618-453-7670).

International Programs and Services

International Programs and Services is an administrative unit within the Chancellor's Office and reports to the Executive Assistant to the Chancellor for Inter-

national and Economic Development. The unit is composed of three divisions: International Students and Scholars, International Development, Community Programs, which represents the local, regional, and state outreach effort of the University in international affairs, is an important subdivision of the International Students and Scholars division. The offices are located at 803 S. Oakland.

International Students and Scholars

The International Students and Scholars division provides comprehensive programs and services for international students and scholars from pre-arrival correspondence to post-graduate concerns. These programs and services include processing of financial clearance for admission, serving as liaison with foreign governments and sponsoring agencies, providing certification for foreign currency exchange, and other needs. This office has been designated by the U.S. Immigration and Naturalization Service (INS) as having the official responsibility for interpretation and adherence to INS laws and regulations as they apply to non-immigrant students and faculty. Also designated responsible officers administer proper compliance with the USIA Exchange Visitor Program for the University. Assistance with INS regulations, forms, and procedures is provided to all non-immigrants related to University and broader community affairs.

Integral educative services include orientation programs, arrival and housing assistance, personal counseling and referral, a *Handbook for International Students and Faculty*, a newsletter (The International Dateline), advisement of international student associations, and a re-entry workshop for internationals going home.

Special programs which promote an international dimension of cross-cultural exchange to the broader community are provided. An annual International Festival and various national day celebrations are held. The Community Programs subdivision in cooperation with the International Friends Club coordinates a Host Family Program, International Speakers' Bureau, English in Action, Language Exchange, American and International Cooking Exchange, an International Spouses Group, and a Loan Closet.

The International Students and Scholars division is located at 910 S. Forest (618-453-5774).

Study Abroad Programs

Study Abroad Programs coordinates overseas services for American students, including international grant programs, exchanges, and study abroad programs. It is the central referral point for information on the student Fulbright program and on the British Marshall, International Research and Exchanges Board (IREX), National Security Education Program, and Rhodes scholarships. Graduate students may also participate in inter-university international exchange programs and in travel/study programs offered during the summer and intercession periods under the auspices of this division.

Study Abroad Programs is located at Small Business Incubator, room 217, on 105 Pleasant Hill Road (618-453-7670).

Touch of Nature Environmental Center

Since 1949, SIUC has been home to this unique center for outdoor, experiential and environmental learning. It is well respected in North America for programs emphasizing both natural and human resources. Touch of Nature offers a wide variety of educational and service programs including environmental education, adventure and therapeutic recreation, executive and staff development, conference and banquet facilities. Educational and service programs are available year around to a variety of population types, age groups and affiliations. Touch of Nature is a 3,100 acre complex located at Little Grassy Lake on Giant City Road.

Student Health Program

Primary medical care is available on campus for SIUC students and includes outpatient care, laboratory and x-ray services, pharmacy services, emergency dental services, wellness programs, and sports medicine programs. Because more complex health issues sometimes arise, students are expected to have their own insurance to cover these expenses. Some students are covered by their parents' insurance policies, but many are not. In order to meet the varied needs of SIUC students for insurance coverage, the Student Health Program makes a comprehensive medical benefit plan available. All SIUC students who have been assessed the Student Medical Benefit Extended Care Fee are automatically enrolled in a group major medical benefit plan. Extended Medical Care Benefit include emergency services, hospitalization, specialty care, and out of area benefits.

If a student is enrolled under an outside insurance plan and desires a refund of the Student Medical Benefit Extended Care fee, application for a refund must be made during the first three weeks of fall semester and spring semester and during the first two weeks of summer session whether or not all tuition and fees are paid. Application must be made *each* semester that a refund is desired. However, if you are covered by another insurance carrier, maintaining the SIUC Student Medical Extended Care Plan may further reduce costs of claims to you. For further information on primary medical care call 618-453-3311 or on the Student Medical Benefit Extended Care plan (insurance) call 618-453-4413.

The Student Health Program is located in Beimfohr and Kesnar Halls and is open 8:00 A.M. to 4:30 P.M., Monday through Friday. Students in need of medical care when the Health Service clinic is closed may call the Dial-A-Nurse program, 618-536-5585 for health care advice. If an ambulance is required, students should call the Jackson County Ambulance Service at 618-684-5678.

Effective July 1, 1989, the Illinois Department of Public Health (Public ACT 85-1315) requires all new students born after January 1, 1957, to present proof of immunizations to the University for diphtheria, tetanus, measles, mumps, and rubella. Students who enroll on-campus shall present to the Student Health Program proof of immunity evidencing the following immunizations, UNLESS they are exempt from doing so as hereinafter provided:

IMMUNIZATION REQUIREMENTS

1. Diphtheria, Tetanus

- a. Students not considered international students are required to provide proof of at least one dose of Tetanus and Diphtheria (Td) vaccine having been received within 10 years of the term of current enrollment.
- b. International students are required to provide dates of any combination of three or more doses of Diphtheria, Tetanus, and Pertussis (DTP), Diphtheria and Tetanus (DT) or Tetanus and Diphtheria (TD) vaccine, with the most recent dose having been received within 10 years of the term of current enrollment.
- c. For international students, the minimum time interval between the first and second dose must have been at least four weeks, with the third dose having been received at least six months after the second or last dose of the basic series.
- d. Receipt of Tetanus Toxoid (T.T.) vaccine is not acceptable in fulfilling this requirement for both international and non-international students.

2. Measles

- a. Immunization with two live measles virus vaccines on or after the first birthday. If vaccine was received prior to 1968, proof must be provided that a live virus vaccine, without gamma globulin, was administered

- with minimum time interval between the first and second dose of at least 30 days; or
- b. Laboratory (serologic) evidence of measles immunity; or
- c. A physician's signed confirmation of disease history and date of conclusive diagnosis.
- 3. Rubella
 - a. Immunization with live rubella vaccine on or after the first birthday; or
 - b. Laboratory (serologic) evidence of rubella immunity.
 - c. History of disease is not acceptable as proof of immunity.
- 4. Mumps
 - a. Immunization with live mumps vaccine on or after the first birthday; or
 - b. A physician's signed confirmation of disease history and date of conclusive diagnosis.
 - c. Laboratory (serologic) evidence of mumps is only acceptable if the diagnostic test utilized to assess immunity is one with demonstrable reliability, including neutralization, enzyme-linked immunosorbent assay (ELISA or EIA), or radical hemolysis antibody test. A four-fold rise in mumps antibody titer between appropriately spaced acute and convalescent sera is also acceptable as proof of immunity.
- 5. Skin Tests
 - a. Required for international students only.

PROOF OF IMMUNITY

1. Proof of immunity may be provided by a certificate of immunity containing:
 - a. A signature by a Health Care Provider (physician licensed to practice medicine in all of its branches [MD or DO] or Registered Nurse or a Public Health Official) or you may attach a copy of the Child Health Exam Form obtainable through your high school. If you are using the Child Health Exam Form, the signature and title of the school official (and date of signature) must be provided. If you are not using the Child Health Exam Form, the signature, title, and telephone number of the health care provider verifying the submitted information (and date) must be indicated in PART II.
 1. All dates must include MONTH, DAY, and YEAR.
 2. All laboratory evidence of immunity must be accompanied by a copy of the laboratory report.
 3. History of disease is NOT acceptable for proof of immunity for rubella.
 4. Mumps titer is NOW acceptable for proof of immunity.
 5. All live virus vaccines must have been given on or after 12 months of age.
 6. Individuals born prior to 1957 can be considered exempt.
 7. International students will be required to have a Tuberculosis test. International students who have been treated for Tuberculosis or have undergone a Tuberculosis prevention program should bring medical evidence (drugs, date of treatment, old X-rays) with them. All medical records must be accompanied by a certified English translation.
 8. International students may find that it is easier to be revaccinated than to obtain the necessary vaccination history.

EXEMPTIONS

1. Medical Contraindications:
 - a. A written, signed, and dated statement from a physician stating the specific vaccine or vaccines which are contraindicated and the duration

of the medical condition that contraindicates the vaccine(s) must accompany the completed Health Information Form.

2. **Pregnancy or Suspected Pregnancy**

- a. If a student is pregnant or suspects pregnancy, a signed statement from a physician must accompany the completed Health Information Form along with the expected date of delivery.

3. **Religious Exemption**

- a. A completed religious exemption form, including signature of pastor or clergyman, citing specific details of your objection must accompany the completed Health Information Form. These forms are available at the Student Health Programs Clinic. NOTE: General philosophical or moral objection to immunization shall not be sufficient for an exemption on religious grounds.

IMMUNIZATION FEES

1. A \$5.00 front door fee will be assessed for each immunization appointment given.
2. A \$25.00 no-show fee will be assessed to each student who fails to appear or cancel at least two hours prior to the scheduled appointment.
3. A \$25.00 late compliance fee will be assessed to students who fail to provide proof of immunity or begin to receive the necessary series of immunizations by the end of the seventh week of the semester.

Disability Support Services

Disability Support Services Office is the central SIUC office for services to students with disabilities. Support services are offered to a wide range of individuals including those with mobility impairments, blind or visual impairments, deaf or hard-of-hearing, learning disabilities, and others.

Services and programs include, but are not necessarily limited to: pre-admission planning, orientation, adapted van transportation, wheelchair repair, adapted recreational opportunities, sign language interpreters, equipment loan, tutor/notetaker/reader/personal care attendant recruitment and referral, test proctoring, accessible housing referral, closer parking exceptions, and liaison with agencies such as Illinois Department of Rehabilitation Services.

Prospective or newly admitted students should contact Disability Support Services at 618-453-5738 for further information.

Women's Services

Women's Services, a component of the Counseling Center, is designed to meet the special needs of women from the University and the surrounding community. Staff members are available to provide information and support to women making educational, vocational, and personal decisions. Some of the services provided by Women's Services include resource and referral information, outreach workshops, consultation by request, short-term individual counseling and support groups. A newsletter is published several times throughout the year which focuses on issues of interest to women. In addition, a library is available which contains books, articles, and periodicals on topics that may assist individuals in their research and/or personal growth.

Women's Services also houses the Campus Safety Program. The Campus Safety Representative provides individual and group counseling to individuals who have experienced rape, sexual assault or sexual harassment. The University's Campus Safety Program also includes women's self-defense classes, the Women's Transit Service, and the Brightway Path. Women's Services also sponsors the Program for Rape Education and Prevention (PREP), which provides prevention and awareness education to individuals, residence halls, classes, and groups upon request.

Women's Services is located at B-244 Woody Hall (618-453-3655). Walk-ins are always welcome. Both women and men are welcome to use the Women's Services office.

The University Ombudsman

The Office of the University Ombudsman assists individuals in resolving problems that arise in the University. The office is independent from other offices of the University and reports directly to the Chancellor. The office acts on complaints or suggestions from students, faculty, and staff in an attempt to ensure that members of the University community receive fair and equitable treatment within the University. This includes ensuring that decisions affecting individuals are made promptly and with due process, not only with respect to the adequacy of the procedures used in decision making, but also with respect to the appropriateness of the criteria and rules upon which decisions are based.

The office helps individuals resolve a broad range of problems expeditiously, including academic matters, employment matters, and matters regarding the delivery of University services. Such assistance may include advising individuals on steps to take so that their claims may be heard or their questions answered, making referrals to other offices, investigating claims of unfair treatment or erroneous procedures, engaging in mediation to obtain a fair settlement, and assisting in accessing University grievance mechanisms when other methods are unsuccessful. In addition, the Ombudsman will intervene in the bureaucratic process on behalf of individuals when such process unnecessarily or unfairly impinges upon them.

The Ombudsman Office also brings to the attention of those in authority any gaps and inadequacies in existing University policies, procedures, and practices which have generated justified claims of unfair treatment or which may cause such complaints in the future.

The Ombudsman has the authority to access official files as required to fulfill the functions of the Office. However, names of persons requesting help cannot be used in the investigation of a case without permission, and all Ombudsman records and communications are kept in confidence.

The office is located in Woody Hall C302; hours are 8:00 A.M. to 4:30 P.M., Monday through Friday; and the telephone number is 618-453-2411.

2 / Academic Programs, Graduate Faculty, and Courses

The academic programs, graduate faculty, and course descriptions are outlined in this chapter.

The official descriptions of programs leading to graduate degrees are arranged below in alphabetical order. The faculty affiliated with each program is listed at the beginning of the description and the courses at the end. The college or school in which the program is located is noted and e-mail addresses are shown at the right margin. Admission and degree requirements which are listed in Chapter 1 are minimum standards. The student should consult the specific program description for additional criteria imposed by the department. All programs are cross-listed to aid in locating the official description. Several departments offer one or more concentrations as noted in Chapter 1 within the major, the requirements for these concentrations may be found in the program description.

Graduate instruction is the responsibility of the graduate faculty. The faculty listed below are arranged in terms of their departmental affiliations. Faculty teaching in interdisciplinary programs are listed under the appropriate programs and are identified as to the department in which they hold an appointment. The first of the two dates listed with the name of a faculty member indicates the year in which the highest degree was earned; the second date indicates the year when the person first became a faculty member at Southern Illinois University at Carbondale.

The 400- and 500-level courses offered by Southern Illinois University at Carbondale are listed numerically after each program description. The first entry for each course is a three-digit identification numeral. Courses numbered 400–499 are open to both seniors and graduate students, unless designated otherwise. Courses numbered above 499 are for graduate students only. Following the course identification number is another number which indicates maximum credit allowed for the course. The maximum may vary, and specific semester hours may be assigned for each term a course is offered. Following the course description may be prerequisites which must be satisfied before a student will be permitted to enroll. Graduate students will not receive graduate credit for Pass/Fail grades taken at the 400 level. Graduate credit is awarded for 500-level courses which have been approved to be graded *S/U* (Satisfactory/Unsatisfactory) only. All courses offered in a specific term will be listed in the appropriate Schedule of Classes which is published three times a year. Schedules are available at the Graduate School, Southern Illinois University at Carbondale, Carbondale, Illinois 62901-4716.

Accountancy
Administration of Justice
Agribusiness Economics
Agricultural Education and
Mechanization

Animal Science
Anthropology
Applied Linguistics
Art
Behavior Analysis and Therapy

Biological Sciences
 Business Administration
 Chemistry
 Cinema and Photography
 Civil Engineering
 Communication Disorders and Sciences
 Computer Science
 Curriculum and Instruction
 Economics
 Education (Ph.D.)
 Educational Administration
 Educational Psychology
 Electrical Engineering
 Engineering
 English
 Food and Nutrition
 Foreign Languages and Literatures
 Forestry
 Geography
 Geology
 Health Education
 Higher Education
 History
 Historical Studies (Ph.D.)
 Journalism
 Manufacturing Systems
 Mathematics

Mechanical Engineering and Energy Processes
 Microbiology
 Mining Engineering
 Music
 Pharmacology
 Philosophy
 Physical Education
 Physics
 Physiology
 Plant Biology
 Plant and Soil Science
 Political Science
 Psychology
 Public Administration
 Recreation
 Rehabilitation Administration
 Rehabilitation Counseling
 Social Work
 Sociology
 Special Education
 Speech Communication
 Teaching English to Speakers of Other Languages
 Telecommunications
 Theater
 Workforce Education and Development
 Zoology

Accountancy

E-mail: ga3854@siucvmb.siu.edu

COLLEGE OF BUSINESS AND ADMINISTRATION

Barron, Mary Noel, Associate Professor, *Emerita*, C.P.A., M.B.A., University of Michigan, 1946; 1948.

Basi, Bartholomew, Professor, C.P.A., D.B.A., Indiana University, 1971; 1978. Financial accounting and taxation of closely-held companies.

Burger, Clifford R., Professor, *Emeritus*, C.P.A., M.S., Indiana State University, 1947; 1958.

Dwyer, Peggy D., Assistant Professor, C.P.A., Ph.D., University of Missouri-Columbia, 1988, 1995. Auditing and financial accounting.

Gribbin, Donald, Associate Professor, C.P.A., Ph.D., Oklahoma State University, 1989; 1989. Managerial and cost accounting.

Hahn, Randall, Associate Professor, C.P.A., Ph.D., University of Kentucky, 1984; 1984. Taxation and auditing.

Karnes, Allan, Associate Professor and *Director*, C.P.A., M.A., J.D., Southern Illinois University at Carbondale, 1986; 1977. Taxation and auditing.

King, James, Associate Professor, C.P.A., Ph.D., Indiana University, 1988; 1987. Behavioral auditing and financial accounting.

Masoner, Michael M., Associate Professor, C.P.A., Ph.D., University of Minnesota, 1975; 1978. Accounting systems and cost accounting.

Rivers, Richard, Associate Professor, C.P.A., D.B.A., Kent State University, 1976; 1978. Quantitative decision models, information systems and managerial accounting.

Sobery, Julie, Associate Professor, C.P.A., Ph.D., Saint Louis University, 1982; 1985. Financial accounting and accounting theory.

Swick, Ralph D., Professor, *Emeritus*, C.P.A., D.B.A., Indiana University, 1954; 1955.

Tucker, Marvin W., Professor, *Emeritus*, Ph.D., University of Alabama, 1966; 1966. Managerial and cost accounting.

Wacker, Raymond, Associate Professor, C.P.A., Ph.D., University of Houston, 1989; 1989. Taxation.

Welker, Robert B., Rehn Professor of Accountancy, Ph.D., Arizona State University, 1977; 1987. Managerial accounting and accounting theory.

Wright, Roland M., Professor, *Emeritus*, C.P.A., Ph.D., University of Iowa, 1962; 1966.

Wu, Fred, Professor, *Emeritus*, C.M.A., Ph.D., Texas Tech University, 1975; 1984.

The objective of the Master of Accountancy degree program is to provide an opportunity for students to achieve greater breadth and depth in the study of ac-

countancy than is possible in the baccalaureate program. As preparation for a dynamic profession the curriculum fosters clear, logical, and analytical thought processes, effective oral and written communications, and life-long learning skills. Graduates pursue careers as professional accountants in public practice, industry, financial institutions, government, and other not-for-profit organizations.

Admission

Applicants for admission to the program are required to:

1. Complete all requirements for admission to graduate study as specified by the Graduate School.
2. Complete the Graduate Management Admissions Test (GMAT). Information regarding the GMAT is available through: Graduate Management Admission Test, Educational Testing Service, Box 966, Princeton, NJ 08540.

The results of the test must be mailed directly to the director of the M.Acc. Program.

A non-refundable application fee of \$20.00 must be submitted with any application to the accountancy program. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Admission to the program is based on a composite of 1) undergraduate grade point average times 200, and 2) GMAT overall score (with minimum verbal percentile of 40%). These two factors are added together to arrive at a composite score. A composite score of 1100 is required to be admitted into the program. For example, an undergraduate grade point average of 3.2 with a GMAT of 550 would yield a composite score of 1190.

Students whose native language is not English will be required to obtain an acceptable score (presently 550) on the Test of English as a Foreign Language (TOEFL) examination before being admitted to the Master of Accountancy degree program.

Notification of admission to the Master of Accountancy degree program is by letter from the director, Master of Accountancy degree program. This letter must be presented by the student prior to enrollment and registration in the program.

Degree Requirements

The Master of Accountancy degree program includes two specializations from which to choose: 1) Taxation, and 2) Audit/Systems. Degree requirements are dependent upon the specialization chosen.

Taxation Specialization:

- a. The following course is required — 3 hours.
BA 514-3 Ethics of Business (formerly ACCT 561)
- b. Select 6 from the following 8 courses — 18 hours.
ACCT 541-3 Tax Concepts
ACCT 542-3 Tax Research and Procedure
ACCT 543-3 Corporate Taxation
ACCT 544-3 Partnership Tax
ACCT 545-3 Estate Planning
ACCT 546-3 Seminar: Selected Tax Topics (541)
ACCT 547-3 Tax Accounting Principles
ACCT 548-3 Interjurisdictional/International Tax
- c. Select 1 from the following 3 — 3 hours.
ENG 491-3 Technical Writing
LAW -3 Elective from the approved list of Law School courses.

BA 530-3 Financial Management

- d. Select 2 electives approved by the M.Acc. director — 6 hours.

Audit/Systems Specialization:

- a. The following course is required — 3 hours.
BA 514-3 Ethics of Business (formerly ACCT 561)
- b. Select 6 from the following 7 courses — 18 hours.
ACCT 521-3 Issues in Accountancy
ACCT 551-3 Accounting Information Systems I
ACCT 552-3 Accounting Information Systems II
ACCT 532-3 Advanced Management Accounting
ACCT 562-3 Computer Auditing
ACCT 590-3 Seminar in Accounting
ACCT 561-3 Advanced Auditing
- c. Select 2 from the following 3 courses — 9 hours.
ENG 491-3 Technical Writing
BA 456-3 Building Design Support and Expert Systems
(ACCT 351 would probably meet the prerequisite of MGMT 345)
BA 560-3 Management Information Systems
- d. Select 1 from the following 4 — 3 hours.
MGMT 548b/c-3 Decision Support/Expert Systems
BA 561-3 Data Base Design & Applications (BA 560)
or MGMT 420-3 Undergraduate equivalent
BA 562-3 Analysis, Planning & Design of Info. Systems (BA 560)
or MGMT 421-3 Undergraduate equivalent
BA 530-3 Financial Management
(No more than 6 hours at the undergraduate level)

A student who does not have any undergraduate work in accounting will be required first to make up deficiencies in the following areas: intermediate accounting, cost accounting, tax, accounting information systems, and auditing.

A student must also complete the common body of knowledge requirements specified by the AACSB. A student who has graduated from an undergraduate accredited (AACSB) business school should have met this requirement. A student who has any deficiencies in any areas required by the AACSB will be required to make up these deficiencies before receiving the Master of Accountancy degree.

The full-time student who qualifies for the minimum program in terms of course work requirements normally may expect to complete the Master of Accountancy degree in one calendar year (two semesters and one summer session). The professional nature of this program requires that the course, writing requirements, oral communications, special lectures, case studies, computer applications, colloquia, independent study, and research activities be presented in an integrated manner which stresses the program aspects at all times. This requires serious and extensive personal commitment to the program on the part of all candidates.

In order to meet the graduate requirements the student must obtain a 3.0 grade point average (4.0 = A) and obtain a B or better in eighty percent of all graduate level courses taken after admission to the M.Acc. program.

Areas of Emphasis

A student who has an undergraduate degree in accounting or one who has satisfied the accounting common body of knowledge may arrange the additional 15 hours of graduate courses beyond the core requirement to form a specific area of emphasis (taxation, information systems, managerial accounting and control,

auditing, or not-for-profit accounting). Emphases are developed with the advice and consent of the student's adviser.

3-2 Program

A 3-2 program within the College of Business and Administration and the School of Accountancy is available to qualified students within the college, transfer students, and students majoring in areas other than business. The program permits a student to devote a part of the last 2 years of undergraduate study to fulfilling the foundation course requirements for business and accounting required for the Master of Accountancy degree. Upon completion of the requirements for the bachelor's degree, the student may apply for admission to the Graduate School and the Master of Accountancy degree program. Students who successfully complete the program would thus have a 5 year program required for certification in some states.

Concurrent J.D. and M.Acc. Program

A student who has been admitted separately to the School of Law and to the M.Acc. program may apply for permission to study concurrently for both the Juris Doctor and Master of Accountancy degrees. This permission must be requested from both the School of Law and the School of Accountancy, ordinarily prior to entry into the second year curriculum of the School of Law.

During the first academic year of concurrent work on the two degrees, the student enrolls only in the first-year law curriculum. In any subsequent academic term, the student may enroll for courses either in the School of Law or in the Master of Accountancy program. A student registered for both law and graduate courses in the same term must enroll for a minimum of 10 hours in law, and 12 semester hours in total, in order to meet A.B.A. residence requirements and the academic requirements of the School of Law.

Completion of the concurrent program requires that the student successfully complete 81 semester hours of law courses and 30 semester hours of courses that meet M.Acc. requirements. Up to 9 semester hours of the 30 may be School of Law courses which are also part of the 81 hours required for the Juris Doctor degree. School of Law courses counting for graduate credit toward the Master of Accountancy degree must be approved by the director of the Master of Accountancy program. Further, no more than 6 of the 30 semester credit hours may be taken in courses at the 400 level for graduate credit.

Other Graduate Degrees Offered by the College

The College of Business and Administration also offers the Master of Business Administration (M.B.A.) degree with specialization in finance, management, and marketing and the Doctor of Business Administration (D.B.A.) degree. Information relative to these degrees may be obtained from the associate dean for graduate programs, College of Business and Administration.

Courses (ACCT)

421-3 Advanced Accounting. Accounting principles and procedures relating to specialized topics, including partnership equity, installment and consignment sales, fiduciaries, international operations, branches, and business combinations. Prerequisite: junior standing and limited to accounting majors or consent of school; a grade of C or better in 322.

431-3 Advanced Cost Accounting. Managerial decision making; profit planning and control through relevant costing, return on investment and transfer pricing, determination of cost behavior patterns, analysis of variances, capital budget-

ing, inventory models, probabilities, statistical methods and operations research. Prerequisite: junior standing and limited to accounting majors or consent of school; 331 with grade of C or better.

441-3 Advanced Tax. Study of income tax problems which arise from sole proprietorship, partnership, corporation, estate and trust of organization. Brief study of social security, federal and state estate tax and gift tax. Student does research in source materials in arriving at solutions of complicated problems. Prerequisite: junior standing and limited to accounting majors or consent of school; 341 with grade of C or better.

451-3 Accounting Systems Operation. The study of accounting information systems, their technology and the management decision process supported by those systems. Prerequisite: junior standing and limited to Accounting majors or consent of school; a grade of C or better in both 322 and 331; Computer Science 212 or Information Management Systems 229.

461-3 Advanced Auditing. (Same as Accounting 561) The study and application of selected auditing concepts and techniques. Hands-on application will be emphasized. Prerequisite: junior standing; 361 with grade of C or better.

471-3 Accounting for Public Organizations. Financial and managerial accounting concepts peculiar to the planning and administration of public and quasi-public organizations, such as governmental units, institutions, and charitable organizations. Includes the conventional budgetary-appropriation process, as well as some of the more recent accounting developments related to public decision making. Prerequisite: For Accounting majors, 230 with grade of B or better.

512-3 to 18 (3 per topic) Accounting Research Methods Seminar. An advanced seminar critically analyzing research methods employed to study problems existing in a subarea of accounting thought, which may be repeated for credit in terms of sections (a) through (f). Sections (a) through (f) may be taken only once each. (a) Auditing, (b) Financial accounting, (c) Managerial accounting, (d) Not-for-profit accounting, (e) Accounting information systems, (f) Taxation. Prerequisite: Business Administration 513 or consent of the school.

521-3 Emerging Issues in Accountancy. Identifies developing areas in financial accounting and forces students to research the issues, to think critically, evaluate alternatives and communicate conclusions in oral and written form. International accounting, not-for-profit, standard setting and regulation, and other developing issues are addressed. *The Journal of Accountancy*, other professional journals, and guest speakers. Prerequisite: 321, 322, or consent of instructor.

532-3 Advanced Management Accounting. Management planning and control decisions and design and evaluation of management accounting systems requiring formal models and application of vigorous analytic reasoning. Integration and synthesis of techniques such as regression analysis, linear programming, decision theory and behavioral science for important decisions of the firm. Information economics. Contemporary research directories. Prerequisite: enrollment in M.Acc. or M.B.A. program or consent of instructor.

541-3 Tax Concepts. Provides the student with an understanding of the nature of the federal tax law and an appreciation of the law's impact upon business decisions both for individuals and companies. Prerequisite: 341 or consent of instructor.

542-3 Tax Research and Procedure. Provides the student with a working knowledge of the tax practitioner's methodology applied to the solution of both routine and complex tax problems. Prerequisite: enrollment in M.Acc. program or consent of instructor.

543-3 Corporate Taxation. Provides students with in-depth exposure to federal income taxation

of corporations and shareholders. Areas explored are corporate formations, distributions, redemptions, liquidations, subchapter S election, corporate income tax, accumulated earnings tax, personal holding company tax and affiliated corporations. Prerequisite: enrollment in M.Acc. program or consent of instructor.

544-3 Partnership Taxation. Provides students with in-depth exposure to the federal income taxation of partnerships and partners. Areas explored are the definition of a partnership, acquisition of an interest, basis of interest, tax accounting for partnership operation, distributions, termination, sale or exchange of interest, collapsible partnerships, death or retirement and tax shelters. Prerequisite: enrollment in M.Acc. program or consent of instructor.

545-3 Estate Planning. A comprehensive study of the various aspects of estate planning, including an analysis of the impact of the federal estate and gift tax laws. In addition, the role of wills, trusts, insurance and other related legal topics necessary to formulate a comprehensive plan is emphasized. The case approach will be utilized wherever feasible. Prerequisite: enrollment in M.Acc. program or consent of instructor.

546-3 Seminar: Selected Tax Topics. Provides students with in-depth exposure to federal income taxation of selected topics. Topics will vary from semester depending upon instructor and topics of current interest. Prerequisite: 541 or consent of instructor.

547-3 Tax Accounting Principles. Provides linkage of accounting skills with tax knowledge through identification of significant differences between tax and financial accounting and selection of tax accounting principles having a significant impact on cash flows. Tax accounting problems for industrial, wholesale and retail companies. Prerequisite: 541 or equivalent and 421.

548-3 International Taxation. Examination of tax accounting problems when taxable events transcend national boundaries. Use of transfer pricing for international taxation purposes. Specific international taxation problems of foreign persons, U.S. citizens living abroad, U.S. shareholders for foreign corporations and special problems related to multinational corporations. Prerequisite: 541 or equivalent and 531 or consent of the School of Accountancy.

551-3 Accounting Information Systems Control and Development. A comparison of operation, control and development of alternative accounting information systems. A study of selected technology for accounting systems development. Prerequisite: 451 or consent of school; enrollment in M.Acc. program or consent of school.

552-3 Accounting Information Systems Development. A study of selected technology for accounting information systems development. Emphasizes design and implementation of particular computerized information systems for diverse uses and purposes. Prerequisite: 551, enrollment in M.Acc. program or consent of school.

561-3 Advanced Auditing. (Same as Accounting 461) The study of current and historical critical evaluations of the accounting and auditing professions. Provides an advanced technical understanding of the auditing process and develops written and oral communication skills essential to

success in the auditing profession. Prerequisite: admission into the M.Acc. program.

562-3 Computer Auditing. The study of electronic issues as they pertain to the attestation function, including internal control, auditing automated systems and the use and application of automated auditing procedures and techniques. Prerequisite: 561, enrollment in M.Acc. program or consent of school.

571-3 Not-For-Profit Accounting. The study of accounting principles and practices of schools, hospitals, governmental agencies, the arts and other not-for-profit organizations. Emphasis is on financial reporting. Prerequisite: enrollment in M.Acc. program or consent of instructor.

590-3 Seminar in Accounting. Discussion of current accounting theories, principles standards and problems. Prerequisite: enrollment in M.Acc. program or consent of instructor.

591-1 to 6 Independent Study. Directed independent study in selected areas of accountancy. Prerequisite: enrollment in M.Acc. program.

595-3 Internship. Supervised work experience in professional accounting. Prerequisite: outstanding record in accounting and recommendation of the department committee on internship. Graded *S/U* only.

599-3 to 6 Thesis. Prerequisite: enrollment in M.Acc. program.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Administration of Justice

E-mail: crimjust@siucvmb.siu.edu

COLLEGE OF LIBERAL ARTS

Anderson, Dennis B., Associate Professor, Ed.D., University of Nebraska, 1970; 1970. Educational psychology; forensic and criminal justice psychology.

Castellano, Thomas C., Associate Professor, Ph.D., State University of New York, Albany, 1986; 1986. Criminal justice; juvenile justice; research methods.

Coughlin, Joseph S., Professor, *Emeritus*, M.S.W., A.C.S.W., University of Wisconsin, 1954; 1973.

Ferdinand, Theodore N., Professor, Ph.D., University of Michigan, 1961; 1985. Social psychology; juvenile delinquency; juvenile justice; history of crime and criminal justice.

Garofalo, James, Professor and *Director*, Ph.D., State University of New York, Albany, 1978; 1992. Criminal Justice; victims of crime; policing; crime prevention; research and analysis.

Johnson, Elmer H., Distinguished Professor, *Emeritus*, Ph.D., University of Wisconsin, 1950; 1966.

LeBeau, James L., Associate Professor, Ph.D., Michigan State University, 1978; 1985. Geography; geography of crime and criminal justice; law enforcement; quantitative methods.

Lorinskas, Robert, Associate Professor, Ph.D., University of Georgia, 1973; 1980. Political science; security.

Matthews, Charles V., Associate Professor, *Emeritus*, M.A., University of Kansas City, 1951; 1962.

McDermott, M. Joan, Assistant Professor, Ph.D., State University of New York, Albany, 1979; 1992. Criminal Justice; juvenile delinquency and juvenile justice; women, crime and criminal justice; victims of crime; policy analysis.

Riedel, Marc P., Associate Professor, Ph.D., University of Pennsylvania, 1972; 1978. Sociology; research methods; violence.

Robinson, Cyril D., Professor, *Emeritus*, LL.B., Northwestern University, 1952; 1979.

Small, Mark A., Associate Professor, J.D., Ph.D., University of Nebraska, 1990; 1990. Psychology and law; mental health law; privacy; children and the law; program evaluation.

Szockyj, Elizabeth, Assistant Professor, Ph.D., University of California, Irvine, 1992, 1994. Criminology; white-collar crime; government crime; juvenile justice; community corrections; research methods.

The Center for the Study of Crime, Delinquency, and Corrections enjoys both a national and an international reputation for quality research and an outstanding educational program. Through many relationships with operating agencies, students are afforded unique opportunities to gain practical experience as an integrated part of their academic work.

A number of opportunities for financial support are offered through the special programs and research projects conducted by individual faculty. In addition there are a number of fellowships offered, for which qualified students are encouraged to apply.

The Center for the Study of Crime, Delinquency, and Corrections offers the Master of Arts degree in the administration of justice. The curriculum is a multidisciplinary study of crime, its causes and settings, and systematic means of responding to it. The curriculum prepares students for careers in law enforcement,

correctional services and administration, teaching, criminal justice research and planning, and private security management. Augmenting the academic program, there are opportunities for graduate students to work with faculty members who are conducting research and designing innovative projects in the field. Students are encouraged to take Supervised Field Experience credit to ensure a blending of practical experience with classroom education.

For students who complete the master's degree in administration of justice and who wish to pursue the Ph.D., opportunities are available through a cooperative arrangement between Administration of Justice and the Department of Sociology.

Admission

Full admission to the graduate program requires at least a 2.7 overall undergraduate average and acceptance by the faculty. Scores on the Graduate Record Examination (aptitude portion only) or the Millers Analogies Test are also required. The Test of Written English will be required as a component of the regular TOEFL exam.

Students who do not have an undergraduate degree in administration of justice or criminal justice should have a minimum of 12 units in sociology, psychology, political science, or other social sciences. In cases where these criteria are lacking, additional selected undergraduate courses may be required for acceptance in this program.

An introductory statistics course is required of all incoming graduate students. This requirement can be satisfied in one of two ways: a) approval by the graduate affairs committee of a course previously taken by the student; or b) successful completion of an approved statistics course during the student's graduate course work. This course is a prerequisite and does not count toward the degree.

Requirements

A total of 36 semester hours are required for the Master of Arts degree in administration of justice. Students may complete the degree under a thesis or non-thesis option.

Required Core Courses. All candidates for the Master of Arts degree in the administration of justice are required to fulfill 15 hours of core courses. These consist of two didactic courses:

AJ 500-3 Foundations of Criminal Justice

AJ 516-3 Scope and Methods of Criminal Justice Inquiry

In addition the student must take one research related course which provides skills that contribute to the generation of knowledge and more thorough utilization of existing information. Appropriate courses include quantitative methods such as AJ 517, Quantitative Techniques in Criminal Justice Research, ED PSYC 507 or POLS 503. Other courses to meet this requirement must be approved by the student's graduate adviser. The statistics requirement for incoming graduate students will not satisfy this requirement.

Two of the following three courses are also required.

AJ 504-3 Criminological Theory

AJ 562-3 Fundamental Legal Concepts in the Administration of Justice

AJ 584-3 Administration and Management in Criminal Justice

Curricular Emphases

The Master of Arts degree is broadly conceived so the student can seek an individualized program appropriate to either continued graduate studies or a particular field of work. Each student is encouraged to work with a faculty adviser to

tailor a program of studies around his or her areas of interest. Suggested course work includes but is not limited to the following:

Juvenile Delinquency. AJ 473-4, 474-3, 578-3; REHB 452-3; SOC 562-4; and other courses approved by the student's graduate adviser.

Law Enforcement. AJ 403-3 to 6, 587-3, 588-3 to 6, and other courses approved by the student's graduate adviser.

Security Administration. AJ 450-3, 588-3 to 6; BA 410-3, 440-3, 510-3, 450-3; POLS 436-3, 444-3; and other courses approved by the student's graduate adviser.

Criminal Justice Counseling. AJ 402-3, 571-3, 578-3; PSYC 414-4, 421-3, 431-3, 440-3; REHB 406-3; and other courses approved by the student's graduate adviser.

Correctional Administration. AJ 484-3, 485-3, 588-3 to 6; POLS 436-3, 441-3, 443-3, 542-3, 543-3, 544-3, 545-3; REHB 570-3, 573-2 to 3, 579-3; SOC 475-4, 539-4; and other courses approved by the student's graduate adviser.

Research in Criminal Justice. AJ 517-3, 580-3, 588b-3, and other courses as appropriate to the student's area of research and approved by the student's graduate adviser.

Supervised Field Experience

Six credits of supervised field experience is required for all students pursuing the non-thesis option. Supervised field experience may also be taken as an elective by any student. Students may take a total of 12 hours supervised field experience; however, only 6 hours may be counted toward the semester hours required for the master's degree.

AJ 595a-3 to 6 Supervised Field Experience, graded *S/U*

AJ 595b-3 to 6 Supervised Field Experience, letter graded

Thesis Option

Students choosing the thesis option may take a total of 6 thesis semester hours (AJ 599-1 to 6); however, only 3 hours are counted towards the degree requirements. An oral defense of the student's thesis is required in this option.

Non-Thesis Option

Students choosing the non-thesis option may take a total of 6 individualized research semester hours (AJ 591-1 to 6); however, only 3 hours are counted towards the degree requirements. Students pursuing this option are required to defend their supervised field experience report publicly and complete a written examination successfully.

Application and Further Information

Application forms for both the Graduate School and the Department of Administration of Justice must be submitted separately. Upon request to the department, application forms from the Graduate School and the department will be sent. Acceptance in the program is contingent on the final approval of the administration of justice graduate affairs committee after admission to the Graduate School.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois Univer-

sity, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

A more detailed description of the graduate program, as well as information about graduate assistantships and fellowships, may be obtained by writing: Graduate Secretary, Center for the Study of Crime, Delinquency, and Corrections, Southern Illinois University at Carbondale, Carbondale, IL 62901-4504.

Courses (AJ)

The following courses are offered through the Center for the Study of Crime, Delinquency and Corrections.

402-3 Group and Family Treatment in Criminal Justice. Presentation of theoretical knowledge and practical techniques utilized in major group and family treatment approaches for adults and juveniles in institutions, community-based correctional programs and transitional living situations. Prerequisite: 201, 290 and 316 or consent of instructor.

403-3 to 9 (3 per topic) Enforcement Operations. (a) Advanced investigation; (b) Enforcement management; (c) Enforcement discretion. Each course topic focuses on a major theme in law enforcement. Prerequisite: (a), (b), and (c): 201, 290 306 and 316 or consent of instructor; additionally for (a) 303; and for (b) 302.

408-3 Criminal Procedure. An introduction to the procedural aspects of criminal law pertaining to police powers in connection with the laws of arrest, search and seizure, the exclusionary rule, civil liberties, eavesdropping, confessions and related decision-making factors. Prerequisite: 201, 290, 310 and 316 or consent of instructor.

415-3 Prevention of Crime and Delinquency. Multidisciplinary analysis of the functions, goals and effectiveness of measures to forestall delinquency and crime. Etiology of delinquent behaviors as related to community institutions such as police, courts, corrections, mental health clinics, schools, churches and citizen groups. Prerequisite: 201, 290 and 316 or consent of instructor.

418-3 Criminal Violence. Examination of historical, comparative, cultural and social structural aspects of homicide, robbery, rape and assaults. Course focuses on trends and patterns in criminal violence, the role of firearms, victim/offender relationships and post-arrest processing of the offender in the criminal justice system. Prerequisite: 201, 290 and 316 or consent of instructor.

450-3 Public and Private Security. An overview of important issues related to security and loss prevention in the public and private sectors. Covers security's historical development; its current role, and the relationship between the public and private sectors. Prerequisite: 201, 290, 316 and 350 or consent of instructor.

451-3 Forensic Interrogation. Forum focusing on forensic interrogation. Conceptual framework for understanding behavioral and psychological aspects of the process; discussion of its historical and philosophical development, use in criminal and private security investigations, legal proceedings and role in a democratic society. Provides both theoretical grounding and hands-on experience. Prerequisite: 201, 290 and 316 or consent of instructor.

460-3 Women and the Criminal Justice System. (Same as Women's Studies 476.) Addresses

the topics of women as offenders, as victims, and as workers in the criminal justice system. Prerequisite: 201, 290 and 316 or consent of instructor.

473-4 Juvenile Delinquency. (See Sociology 473.) Prerequisite: 201, 290 and 316 or consent of instructor.

474-3 Juvenile Justice. The evolving definition of juvenile misbehavior and the legal mechanisms that have emerged to control it. The problems and promise of juvenile justice in terms of the juvenile code and court, law enforcement, custodial and treatment institutions and community treatment. Prerequisite: 201, 290 and 316 or consent of the instructor; 473 or equivalent recommended.

476-3 Crime and Criminal Justice: International Dimensions. Examination of sociocultural and political factors shaping criminality and responses to crime around the world. Similarities and differences in criminogenic conditions and practices of law enforcement and corrections are traced. Prerequisite: 201, 290 and 316 or consent of instructor.

477-3 Theoretical Analyses of Crime. Examination of theories of crime and criminality. Major topic areas include types of theories, the development and testing of theories, explanations of the kinds and degrees of crime observed in society, and explanations of processes involved in the development of criminal behavior. Emphasis is on current directions in theories of crime. Prerequisite: 201, 290 and 316 or consent of instructor.

484-3 Correctional Institutions. (Same as Sociology 484) Examination of the roles, purposes, structures and functioning of institutional corrections within the U.S. Emphasis is placed on understanding the philosophies, elements, structures and programs that shape current institution operations and their impacts on offenders, staff and the community. Prerequisite: 201, 290, 316 or the consent of instructor.

485-3 Corrections and the Community. Traditional correctional functions are redefined to emphasize the development of resources in communities, diversion of convicted offenders from institutions and direct involvement of correctional programs in community affairs. Prerequisite: 201, 290 and 316 or consent of instructor.

490-1 to 3 Independent Study in the Administration of Justice. Supervised readings or independent research projects in various aspects of crime control, treatment of offenders, and the management of criminal justice programs and agencies. May be repeated up to a maximum of three credit hours. Prerequisite: 201, 290 and 316 and consent of instructor.

492-3 Contemporary Issues in Administration of Justice. A forum, geared toward seniors,

majoring in administration of justice, that focuses on criminal justice issues of concern to students and faculty. May re-enroll for a maximum of six credits. Prerequisite: 201, 290 and 316 and consent of instructor.

500-3 Foundations of Criminal Justice. An exploration of the nature and scope of the criminal justice process. Criminal justice operations and behavior are assessed in context of the major theoretical, historical, normative and organizational influences found in the field.

504-3 Criminological Theory. Multidisciplinary study of biogenic, psychogenic and sociogenic explanations for criminal behavior relevant to policy-making and practice in criminal justice. Prerequisite: consent of instructor.

516-3 Scope and Method of Criminal Justice Inquiry. Principles of scientific inquiry applied to the study of crime and criminal justice. Examines the interrelationship of theory and research techniques, development of hypotheses and problem statements, different approaches to data collection and research designs.

517-3 Quantitative Techniques in Administration of Justice Research. Examination and application of advanced statistical techniques often utilized in criminal justice research.

562-3 Fundamental Legal Concepts in the Administration of Justice. Includes the origin of rights, a review of the historical development and current use of civil rights; due process, equal protection and cruel and unusual punishment; affirmative action, the limits of governmental action; and the application of these doctrines to various populations such as criminal justice personnel, prisoners, women and minorities.

571-3 Correctional Systems in Criminal Justice. Evaluation of corrections as a system, its programmatic interrelationships and conflicts and the probable course of its future development. Prerequisite: consent of instructor.

578-1 to 4 Seminar in Correctional Rehabilitation Counseling. Review of major issues and research relative to rehabilitation practices in youth and correctional settings. Prerequisite: consent of instructor.

580-3 Planning for Change in the Administration of Justice. Examines the planning of change in criminal justice. Presents perspectives and models used in understanding the dynamics of planned change and why change efforts succeed or fail. Discusses types of change strategies, targets of change and levels of intervention with focus on broad-based organizational and system-level change.

582-3 Criminal Law and the Correctional Process. Basic principles and administration of the criminal law and the legal foundations of the juvenile court, the sentencing process, parole and probation and the changing concept of mental competency. Includes statutory, case, and administrative law requirements of "due process" in correctional services.

584-3 Administration and Management in Criminal Justice. Focuses on the development and history of administrative theory and its im-

pact on management techniques involving administration of justice bureaucracies.

587-3 Seminar in Law Enforcement. Multidisciplinary study of the philosophical premises, theoretical implications and functions of contemporary law enforcement. Prerequisite: consent of instructor.

588-3 to 6 (3 per topic) Selected Topics in the Administration of Justice and Public Safety.

(a) Personnel administration. Issues and processes in the education, selection, training, and promotion of administration of justice personnel are reviewed. (b) Policy and program evaluation. Examination of approaches and problems in the analysis and evaluation of criminal justice personnel, policy and problems, with attention paid to both process and outcome analyses.

590-1 to 6 Supervised Readings in Selected Subjects. Readings supervised by a faculty member in a selected area of the Administration of Justice. May be repeated with different topics up to a maximum of six credits. Prerequisite: consent of a faculty sponsor.

591-1 to 6 Field Project Research. A requirement for the non-thesis option directed by a faculty committee. Usually represents an applied research project addressing an issue/problem confronted during supervised field work (595a and 595b). Graded *S/U* only. Prerequisite: consent of graduate faculty advisor.

592-3 to 6 (3,3) Advanced Seminar in Administration of Justice. Seminars of varied content for advanced students. May be repeated with different topics up to a maximum of six credits. Prerequisite: consent of instructor.

595A-3 to 6 Supervised Field Experience. Experience in law enforcement agencies, juvenile courts, probation and parole departments, correctional institutions, delinquency control programs and public or voluntary agencies. Orientation sessions precede placement. Student must submit internship application during the first 30 days of the preceding spring or fall semester. Graded *S/U* only. Prerequisite: consent of instructor.

595B-3 to 6 Supervised Field Experience. Experience in law enforcement agencies, juvenile courts, probation and parole departments, correctional institutions, delinquency control programs and public or voluntary agencies. Orientation sessions precede placement. Student must submit internship application during the first 30 days of the preceding spring or fall semester. Graded on a letter grade basis. Prerequisite: consent of instructor.

599-1 to 6 Thesis. Graded *S/U* only. Prerequisite: consent of academic coordinator.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Agribusiness Economics

E-mail: gradinfo@siucvmb.siu.edu

COLLEGE OF AGRICULTURE

Beaulieu, Jeffrey R., Associate Professor, Ph.D., Iowa State University, 1984; 1983.

Beck, Roger J., Associate Professor, Ph.D., Pennsylvania State University, 1977; 1984.

Eberle, Phillip R., Associate Professor, Ph.D., Iowa State University, 1983; 1983.

Harris, Kim S., Associate Professor, Ph.D., University of Illinois, 1985; 1984.

Herr, William McD., Professor, *Emeritus*, Ph.D., Cornell University, 1954; 1957.

Keeper, Wendell E., Professor, *Emeritus*, Ph.D., Cornell University, 1938; 1950.

Kraft, Steven E., Professor and *Chair*, Ph.D., Cornell University, 1976; 1980.

Rendleman, C. Matthew, Assistant Professor, Ph.D., Purdue University, 1989; 1994.

Solverson, Lyle, Associate Professor, Ph.D., University of Wisconsin, 1967; 1966.

Wills, Walter J., Professor, *Emeritus*, Ph.D., University of Illinois, 1952; 1956.

The Department of Agribusiness Economics offers graduate work leading to the Master of Science degree with a major in agribusiness economics.

Students interested in agricultural economics at the doctoral level can be admitted to a program of study leading to the Ph.D. degree in economics.

Application forms for admission to the Graduate School may be obtained from the department. For entering graduate students to be acceptable on an unconditional basis in the agribusiness economics Master of Science degree program, a minimal undergraduate grade point average of 2.7 is required.

Inquiries for financial assistance and additional information would be directed to the chair of the Department of Agribusiness Economics, Southern Illinois University at Carbondale, Carbondale, IL 62901-4410.

Agribusiness Economics Concentration

Emphasis may be attained in farm management, agricultural marketing, agricultural prices, agricultural policy, resource economics, and agribusiness management and finance.

Undergraduate competence in economics and agricultural economics must be demonstrated. Students with an insufficient background in economics or agricultural economics may be admitted if remedial courses are taken.

A minimum of 30 hours of graduate credit, including a thesis, is required for the Master of Science degree major in agribusiness economics with a concentration in agribusiness economics. At least 15 hours must be at the 500 level.

Thirteen hours of agribusiness economics courses are required. This includes ABE 500a, 500b, 551, 552, and 581. In addition, the student's program is oriented toward either economics or business. The emphasis in economics is accomplished by completing six hours of graduate level courses in the Department of Economics. The emphasis in business is accomplished by completing six hours of graduate level courses in the College of Business and Administration. Such work completed as part of an undergraduate degree may be accepted in meeting the economics or business program requirements. This enables students with strong backgrounds in economics or business to take additional agribusiness economics courses or courses in their area of interest to meet the 30 hour M.S. degree requirement. Students are required to take 3-6 hours of thesis.

M.B.A./M.S. in Agribusiness Economics Concurrent Degree Program

The Department of Agribusiness Economics (ABE) in the College of Agriculture (COA) and the College of Business and Administration (COBA) together offer an M.B.A./ABE M.S., a concurrent degree program leading to both the Master of Business Administration and the Master of Science degrees with a major in agribusiness economics. The M.B.A. degree requires completion of 32 semester hours of course work; the M.S. with a major in ABE requires the completion of 30 semester hours of course work. In the concurrent M.B.A./M.S. degree pro-

gram, COBA accepts 6 semester hours of ABE approved course work, and ABE accepts 6 semester hours of COBA approved course work. The end result is that the concurrent degree program entails completion of 26 semester hours of COBA approved courses and 24 semester hours of ABE approved courses, for a total of 50 hours; this is a savings of 12 semester hours over pursuing both degrees separately outside of the M.B.A./ABE M.S. concurrent degree program.

Students interested in enrolling in the concurrent M.B.A./M.S. in agribusiness economics program must apply to both the graduate program in ABE and the graduate program in COBA. The student must be accepted by both programs. This initiates the process to pursue the concurrent degrees.

Students enrolled only in the M.S. in agribusiness economics or only in the M.B.A. in COBA may request admission into the other program and approval to pursue the concurrent degree program. Admission to the concurrent degree program must be done at least one semester prior to the last semester of registration at SIUC.

Agricultural Services Concentration

The agricultural services concentration is designed to permit students who are engaged in agriculture as extension workers, as soil conservation employees, in mechanization related industries, agricultural environmental service, etc., to expand their educational experiences in light of current and prospective employment goals and opportunities.

A minimum of 30 hours of graduate credit, including a thesis, is required for the Master of Science degree major in agribusiness economics with a concentration in agricultural services. At least 15 hours must be at the 500 level. Fifteen hours must be agricultural courses. Students are required to take 3–6 hours of thesis.

Courses (ABE)

Field trips are required for certain courses.

401-3 Agricultural Law. Relations of common-law principles and statutory law to land tenure, farm tenancy, farm labor, farm management, taxation and other problems involving agriculture. Prerequisite: junior standing or consent of instructor.

402-1 to 6 Problems in Agribusiness Economics. Designed to improve the techniques of agribusiness economics workers through discussion, assignment, and special workshops on problems related to their field. Emphasis will be placed on new innovative and currently developed techniques for the field. Prerequisite: consent of chair.

440-3 Land Resource Economics. The use of land as an economic variable in production of goods and services; land markets; public versus private land use conflicts; and land-use planning in an institutional setting. Prerequisite: 12 hours of agricultural economics or economics credit, or graduate status or consent of instructor.

444-3 Agricultural Development. Analysis of the economic, social, political, cultural, and institutional factors related to economic growth and development in agricultural sector. Framework for evaluating outcome of alternative strategies in agricultural production, marketing, and government policies that affect output, income distribution and resource use in agriculture and the related agroindustrial complex. Prerequisite: 204.

450-3 Advanced Farm Management. Application of production economic principles and mod-

ern decision-making techniques to farm management problems. The importance of information, sources of agricultural risk and management of risk in farm planning will be integrated. Prerequisite: 350 or equivalent and General Education Mathematics requirement.

451-2 Farm Real Estate Appraisal. Principles and practices of farm real estate appraisal. Application of capitalization, market and cost approaches for estimating market value. Understanding of special valuation methods used for buildings, insurance, assessments, loans and condemnation. Field trips not to exceed \$10. Prerequisite: 350 or consent of instructor.

453-3 Agribusiness Planning Techniques. Application of mathematical programming to agribusiness and farm planning, including enterprise selection, resource allocation, least cost ration formulation, decision making under risk and uncertainty, transportation and location problems. Emphasis placed on modeling problems and interpretation of results. Prerequisite: 350 or consent of instructor.

460-3 Agricultural Prices. Measurement and interpretation of factors affecting agricultural prices. Construction of index numbers, trend analysis, seasonal and cyclical price movements and the measurement of relationships between price and other variables. Prerequisite: 362 or equivalent.

461-3 Agriculture Business Management. Examination of agribusiness firm management with

emphasis on the management and control of financial resources and the interrelationship between the agribusiness firm and human resource management. Other topics in agribusiness will include effective communication in the management process, business ethics and workable credit programs for customers. Prerequisite: 351 and 360 or equivalent.

462-3 Advanced Agricultural Marketing. Advanced treatment of marketing issues from both theoretical and practical decision-making perspectives. Marketing margins, intertemporal and spatial price relationships are reviewed in detail. Historical and current grain and livestock price series are utilized in decision-making exercises. Prerequisite: 362 or equivalent.

500-6 (3,3) Agribusiness Economics Research Methodology. (a) Social science research methodology in agriculture, including defining research problems, hypothesis formation, specification of research design, survey methodology, source of data and development of research proposals. (b) A survey of applied techniques and procedures for developing and evaluating agricultural economic research models with an emphasis on multiple regression and time-series models. Prerequisite: Educational Psychology 506 or equivalent.

551-3 Resource Allocation in the Agribusiness Firm. An examination of resource allocation in the agribusiness firm. Production decisions, agricultural product price analysis and decision making models are considered. Prerequisite: six hours of agricultural economics or economics or consent of instructor.

552-3 Problems and Policies of the Agricultural Sector. An analytical survey of agricul-

tural policy issues including agricultural price and income stabilization; international trade, capital and credit, the structure of agriculture and the quality of life in rural areas. Prerequisite: six hours of agricultural economics or economics or consent of instructor.

581-1 to 4 Seminar in Agribusiness Economics. Seminar on current research and issues in agribusiness economics on topics such as farm management, farm policy, agricultural marketing, farm finance, agricultural prices and international agriculture.

588-1 to 8 International Graduate Studies. University residential graduate study program abroad. Prior approval by the department is required both for the nature of program and the number of semester hours of credit.

590-1 to 4 Readings. Readings in specialized topics under the direction of an approved graduate faculty member. Graded *S/U* only.

593-1 to 4 Individual Research. Directed research in selected topics under the supervision of an approved graduate faculty member. Graded *S/U* only.

599-1 to 6 Thesis. Work in the research for and presentation of a thesis under the supervision of an approved faculty member. Graded *S/U* only.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Agricultural Education and Mechanization

E-mail: judyw@siu.edu

COLLEGE OF AGRICULTURE

Benton, Ralph A., Professor, *Emeritus*, Ph.D., University of Illinois, 1955; 1956.

Doerr, William A., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1973; 1965.

Legacy, James, Professor, Ph.D., Cornell University, 1976; 1977.

Steffen, Richard W., Assistant Professor, Ph.D., Iowa State University, 1993; 1994.

Stitt, Thomas R., Professor, Ph.D., Ohio State University, 1967; 1967.

Wolff, Robert L., Professor and *Chair*, Ph.D., Louisiana State University, 1971; 1972.

Wood, Eugene S., Professor, *Emeritus*, Ed.D., University of Missouri, 1958; 1949.

The Department of Agricultural Education and Mechanization offers graduate work leading to the Master of Science degree majoring in agricultural education and mechanization with concentrations in agricultural education, agricultural mechanization, and agricultural information.

Students interested in agricultural education at the doctoral level can be admitted to a program of study leading to the Ph.D. in education.

Application forms for admission to the Graduate School may be obtained from the department. For entering graduate students to be acceptable on an unconditional basis in the agricultural education and mechanization concentrations for the Master of Science degree program, a minimal undergraduate grade point average of 2.7 is required.

Inquiries for financial assistance and additional information should be directed to the chair of the Department of Agricultural Education and Mechanization, Southern Illinois University at Carbondale, Carbondale, IL 62901-4414.

Agricultural Education Concentration

The concentration in agricultural education is designed for instructors in secondary schools, for students preparing for employment at junior colleges, and for those desiring to continue their education by obtaining a Ph.D. degree.

A minimum of 30 hours of graduate credit, including thesis or research hours is required for the M.S. degree major in agricultural education and mechanization with a concentration in agricultural education. At least 15 hours must be at the 500 level.

A minimum of 15 hours is required in agriculture (including agricultural education), six hours of research methods or statistics, and six hours in education or community development. M.S. students usually take 4–6 hours of research or thesis, and complete the additional hours by taking courses in education or agriculture.

Agricultural Mechanization Concentration

The concentration in agricultural mechanization is designed to permit students interested in agricultural mechanization the opportunity to emphasize one or more of the following areas: (a) power and machinery operation and field testing, (b) product handling, processing, and storage, (c) farm equipment sales, service, and product education, (d) machinery selection and efficient utilization in the farming operation, (e) agricultural structures — sales and construction supervision, (f) agricultural electricity — service and consumer advisement, (g) conservation of soil and water. Each of these areas offers application in agricultural environmental studies.

A minimum of 30 hours of graduate credit, including thesis or research hours is required for the Master of Science degree with a major in agricultural education and mechanization with a concentration in agricultural mechanization. At least 15 hours must be at the 500 level.

Agricultural Information Concentration

The agricultural information concentration is designed to provide graduate training for extension agents, agricultural communication professionals, product-education specialists, and others who are interested in agricultural information processing and transfer to a variety of non-student clientele.

A minimum of 30 hours of graduate credit, including thesis or research hours, is required for an M.S. degree with a major in agricultural education and mechanization with a concentration in agricultural information. At least 15 hours must be at the 500 level. Fifteen hours must be agricultural courses. Students usually take 4–6 hours of research or thesis and complete the additional hours by taking courses in their concentration.

Courses (AGEM)

Field trips are required for certain courses.

402-1 to 12 (1 to 6 per topic) Problems in Agricultural Education and Mechanization.

(a) Agriculture education, (b) agriculture mechanization. Designed to improve the techniques of agricultural education and mechanization workers through discussion, assignment and special workshops on problems related to their field. Emphasis will be placed on new innovative and currently developed techniques for the field. A limit of six hours will be counted toward graduation in

Master's degree program. Prerequisite: consent of chair.

411-3 Human Resource Development Programs in Agriculture. Principles and procedures of human resource development (HRD) programs in agriculture with emphasis on program determination and methods. Prerequisite: junior standing.

412-3 Methods of Agriculture Mechanization. Theory and use of educational materials and de-

vices adaptable to the needs and interests of educators involved in agricultural mechanization laboratories. There is a \$15 laboratory fee for this course.

414-3 Adult Education Procedures, Methods and Techniques. Determining adult education needs and interests of the community. Securing and organizing the information needed for adult education programs and planning teaching activities.

415-3 Beginning Teacher Seminar. The application in the professional field setting, of principles and philosophies of the education system. Includes application of principles of curricula construction, programming student and community needs. Prerequisite: consent of instructor.

418-3 Applications of Integrated Software/Agriculture. (Same as Workforce Education and Development 409.) Design of agricultural or educational applications of integrated software. Spreadsheet, database, wordprocessing, graphic and communications software will be applied to the solution of agricultural problems. Individual student projects will be the focus of the applied nature of the class. Prerequisite: junior standing or consent of instructor.

473-3 Planning Agricultural Electrical Systems. Design and plan the efficient application of electrical service to agricultural buildings and operations. National electric and local code requirements and safety are emphasized. Prerequisite: 170 or equivalent.

474-3 Advanced Agricultural Structures. A study of design characteristics, construction, methods and environmental control applicable to agricultural structures. Design construction and environment are considered from the standpoint of the function of the building of an agricultural enterprise. Prerequisite: 384 or equivalent.

476-3 Agricultural Safety and Health. Analysis of safety and health issues important to managers and supervisors in agricultural operations. Topics include agricultural accident data, causes and effects of accidents, hazard identification, strategies for accident prevention, response to accidents and health risks and safeguards. Development and documentation of accident and illness prevention activities in the workplace. Prerequisite: junior standing.

499-3 Agriculture Information for Elementary Teachers. A general inquiry into the agriculture literacy appropriate for elementary students. A framework for evaluating content appropriate for elementary students in the pursuit of agriculture literacy will be developed.

483-3 Agricultural Materials Handling, Processing and Storage. Arrangement of systems for animal waste disposal, feed handling and processing and storage of agricultural products. Prerequisite: 373 or 384 or 473 or 474.

500-3 Agricultural Education and Mechanization Research Methodology. Social science research methodology in agriculture including defining research problems, preparing project proposals and sources of data.

501-3 Recent Research in Agricultural Education. A study of recent research and development in agricultural education. The course includes an analysis of regional and national scholarly publications, procedures and products. Prerequisite: graduate status and consent of instructor.

525-3 Program Development in Agricultural Education. Analysis and appraisal of current trends in agricultural education program development. Attention is given to implications for educators at the high school, post secondary and in extension education positions. Offered each year, alternating spring and summer semesters.

526-3 Professional Development in Agricultural Education. Recent developments and trends in agricultural education are presented for review and discussion. The role of the agricultural instructor in determining educational priorities is emphasized. Offered each year, alternating fall and summer semesters.

572-3 Current Problems and Research in Power and Machinery. A study and analysis of current problems, research findings and innovations in agricultural power units and machinery. Prerequisite: 372 or equivalent.

581-1 to 8 (1 to 4 per topic) Seminar. (a) Agriculture education. (b) Agriculture mechanization. Study and discussion in selected topics under the supervision of an approved graduate faculty member. A maximum of four hours can be counted toward a Master of Science degree.

588-1 to 8 International Graduate Studies. University residential graduate study program abroad. Prior approval by the department is required both for the nature of program and the number of semester hours of credit.

590-1 to 4 Readings. Readings in specialized topics under the direction of an approved graduate faculty member. Graded *S/U* only.

593-1 to 4 Individual Research. Directed research in selected topics under the supervision of an approved graduate faculty member. Graded *S/U* only.

595-1 to 4 Agricultural Occupation Internship. Prepares coordinators to fulfill their responsibilities in selected areas in agricultural related occupations through an internship in the area of specialization and through orientation to related technical information. Prerequisite: consent of department.

599-1 to 6 Thesis. Work in the research for and presentation of a thesis under the supervision of an approved faculty member. Graded *S/U* only.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Animal Science

E-mail: asms01@siu.edu

COLLEGE OF AGRICULTURE

Arthur, Robert, Professor, Ph.D., University of Missouri, 1970; 1977. Monogastric nutrition, biochemistry.

Carnevale, Elaine M., Assistant Professor, D.V.M., Colorado State University, 1985; Ph.D., University of Wisconsin-Madison, 1994; 1994. Equine reproductive physiology.

Dado, Richard G., Assistant Professor, Ph.D., Michigan State University, 1993; 1994. Dairy production, ruminant nutrition.

Goodman, Bill L., Professor, *Emeritus*, Ph.D., Ohio State University, 1959; 1958.

Hausler, Carl L., Associate Professor, Ph.D., Purdue University, 1970; 1970. Reproductive physiology.

Hinners, Scott W., Professor, Ph.D., *Emeritus*, University of Illinois, 1958; 1951.

Kammlade, W. G., Jr., Associate Professor, *Emeritus*, Ph.D., University of Illinois, 1951; 1954.

King, Sheryl S., Professor, Ph.D., University of California, Davis, 1983; 1983. Reproduction physiology, equine science.

Kroening, Gilbert H., Professor and *Chair*, Ph.D., Cornell University, 1965; 1969. Swine production, monogastric nutrition.

Olson, Howard H., Professor, *Emeritus*, Ph.D., University of Minnesota, 1952; 1954.

Strack, Louis E., Associate Professor, *Emeritus*, D.V.M., University of Illinois, 1961; 1968. Veterinary medicine.

Winters, Todd A., Assistant Professor, Ph.D., University of Wisconsin-Madison, 1992; 1994. Animal biotechnology, reproductive physiology.

Woody, Harold Dee, Associate Professor, Ph.D., Michigan State University, 1978; 1978. Ruminant nutrition, growth.

Young, Anthony W., Professor, Ph.D., University of Kentucky, 1969; 1980. Ruminant nutrition, forages.

The Department of Animal Science, Food and Nutrition offers programs of study leading to the Master of Science degree with a major in animal science. Programs may be designed in the various disciplines of nutrition, reproductive physiology or growth and development with emphasis on beef cattle, dairy cattle, horses, or swine. Supporting courses may be selected in applied science, chemistry, microbiology, physiology, zoology, behavioral science, agriculture, etc.

Admission to programs administered by the Department of Animal Science, Food and Nutrition must be approved by the department. Application and reference forms will be provided upon request from the department. Applicants must have the registrar of each college previously attended send official transcripts directly to the Graduate School.

Requirements

Minimum requirements for the master's degree may be fulfilled by satisfactory completion of 30 semester hours of graduate credit, with a minimum of 15 hours in animal science. A maximum of two animal production related courses (409, 419, 430, 455, 465, 485) may be counted for graduate credit. At least 8 hours of graduate credit must be earned outside the College of Agriculture. Minimal requirements for students entering the master's degree program are: (a) meet animal science undergraduate requirements; (b) minimal GPA of 2.7 ($A = 4.0$); (c) CHEM 340 and 344 or organic chemistry equivalent.

Students who do not meet the undergraduate requirements may correct these deficiencies while an unclassified student or with the consent of the department during graduate study. Students entering the animal science graduate program with a GPA below 2.70 are accepted on a conditional basis and must enroll in 8 hours of structured courses at the 400–500 level during their first semester and make a 3.0 GPA or be dropped from the program.

Each student, whether in the thesis or non-thesis option, will have an advisory committee of at least four members including the departmental chair and at least one other member of the department. Each master's degree candidate must pass a comprehensive oral examination covering all graduate work including the thesis or research paper.

Students interested in animal science at the doctoral level can be admitted to a program of study leading to the Ph.D. degree in physiology. The program, in the Department of Physiology, is adequately flexible to allow students to emphasize such areas as behavioral science, endocrinology, metabolism, microbiology, physiological genetics, or reproductive physiology. For admission requirements and program description the student should consult the physiology section in the *Graduate Catalog*.

Information concerning admission policies, requisites for graduation, and availability of financial assistance for graduate study in animal science may be obtained from the Department of Animal Science, Food and Nutrition, Southern Illinois University at Carbondale, Carbondale, IL 62901-4417.

Courses (ANS)

Field trips are required for certain courses.

409-4 Equine Science. Designed for students interested in the more scientific aspects of equine physiology and management. The class will take a more advanced look at anatomy and physiology of the systems of the equine and consider how they relate to selection, use and management. Lecture and laboratory. Prerequisite: 219, 220, 331 or Physiology 310 or equivalent.

410-3 Meat Science. Chemical, physical and nutritional properties of meat and meat products. Topics covered include muscle function, tissue growth and development, aspects of post mortem change including rigor mortis, meat microbiology, methods of analysis and quality control. Prerequisite: 210, Chemistry 140 or equivalent and a course in physiology.

414-3 Animal Feed Quality Control. Laboratory procedures for nutrient determinations used in animal feed quality control. Prerequisite: Chemistry 140 or equivalent.

415-4 Advanced Animal Nutrition. Advanced principles and practices associated with digestion, absorption and metabolism of nutrients as related to domestic monogastrics, ruminants and horses. Prerequisite: 215 and 315.

416-3 Ruminant Nutrition. Practical knowledge gained of problems associated with digestion, absorption and metabolism of nutrients as related to domestic ruminants, horses and other pseudo-ruminants. Prerequisite: 215 and 315.

419-4 Stable Management. Designed for the advanced equine science student planning a career in the horse field. Teaches in-depth management techniques on an applied basis. Students will have the opportunity to learn both theory and application of management in one course. One hour lecture, four hours laboratory. Laboratory fee \$20. Prerequisite: 219, 409 and consent of department.

420-4 Commercial Poultry Production. Principles and practices of management of broilers, layers and turkeys as adapted to commercial operations. Field trip. Offered fall semester of even numbered years. Prerequisite: 315 or consent of instructor.

421-2 International Animal Production. A study of world animal production practices with emphasis on the developing countries. Adaptability of animals to environmental extremes and management practices employed to improve productivity. Prerequisite: junior standing plus Animal Science 121 or one year of biological science.

430-4 Dairy Cattle Management. Application of the principles of breeding, physiology and economics to management of a profitable dairy herd. Breeds of dairy cattle, housing, milking practices and quality milk production. Field trip. Students enrolled will incur field trip expenses of approximately \$25. Prerequisite: 315, 332.

431-4 Reproductive Physiology of Domestic Animals. Comparative anatomy and physiology of the male and female reproductive system of domestic animals; hormones; reproductive cycles; mating behavior; gestation and parturition; sperm physiology; collection and processing of semen; artificial insemination, pregnancy tests; diseases. Prerequisite: 121 or a course in physiology.

432-2 Quantitative Inheritance of Farm Animals. A review of the genetic principles underlying changes in animal breeding population; interpretations of gene frequency, heritability and genetic correlations; application of selection and breeding systems in farm animals. Prerequisite: 332.

433-4 Introduction to Agricultural Biotechnology. (Same as Plant and Soil Science 433.) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer and expression will be derived. Prerequisite: senior standing or consent of instructor.

434-2 Physiology of Lactation. Anatomy and physiology of milk secretion; endocrine control; milk precursors and synthesis; milk composition; physiology and mechanics of milking, mastitis. Offered only fall semester of odd numbered years. Prerequisite: course in physiology.

435-1 to 4 Agricultural Molecular Biotechnology Seminar. (Same as Plant and Soil Science 435) Molecular biology is rapidly making important contributions to agricultural science through biotechnology. An appreciation of the techniques of molecular biology and their application to plant improvement is important to all in agriculture and biology. The relationships between plant molecular biology and the biotechnology industry will be discussed. Presentations on particular research problems will be made. Graded S/U.

455-2 Animal Waste Management. Acquaints the student with the scope and problems involved with animal waste management, current regulations and laws on environmental protection. Principles covering waste management technology and current livestock waste management systems are presented. Field trips will be scheduled. Prerequisite: junior standing.

465-4 Swine Production. Swine production systems and management techniques including breeding and selection, reproduction, nutrition, herd health and disease prevention, housing and waste management, marketing, production costs and enterprise analysis. Field trip. Prerequisite: 315 and 332 or consent of instructor.

480-3 Sheep Production. Breeding, feeding and management of sheep. Field trip. Prerequisite: 315.

481-1 Current Topics in Equine Science. Seminar exploring selected topical concerns in the horse industry. Students will prepare and present an individual seminar on current scientific work in the equine area. Such areas of study might include but are not limited to behavior, nutrition, reproduction, management, veterinary advances and general and exercise physiology. Prerequisite: 419.

485-4 Beef Production. Beef cattle production systems and management, breeding and selection, reproduction, nutrition and herd health with emphasis on the most economical and efficient systems. Field trip. Students enrolled will incur field trip expenses of approximately \$5. Prerequisite: 315 and 332 or consent of instructor.

500-3 Research Methods in Agricultural Science. Experimental design and biometry as applied to biological and allied fields. Prerequisite: graduate student.

502-2 Surgical Research Techniques in Farm Animals. Basic methods of experimental surgery and sampling of biological materials in research on farm animals. Practice of techniques discussed in the lectures. Prerequisite: consent of instructor.

506-3 Instrumentation Methods in Agricultural Science. Basic methods and techniques of spectrophotometric and chromatographic instrumentation are taught in the lectures with applica-

tion of instruments carried out in the laboratories. Prerequisite: consent of instructor.

515-3 Energy and Protein Utilization. Energy and protein utilization including digestion, absorption and metabolism as related to domestic animal production. Prerequisite: Chemistry 344 and 345.

516-3 Minerals and Vitamins in Animal Nutrition. Basic and applied principles of mineral and vitamin metabolism. Emphasis on metabolic functions, reaction mechanisms and interrelationships. Prerequisite: Chemistry 344 and 345.

531-2 Topics in Theriogenology. Current research topics in reproduction of domestic mammals are discussed in relation to improving production technology. Emphasis is on neural and endocrine control mechanisms that may be modified to increase animal productivity. Prerequisite: 431.

581-1 to 2 (1,1) Seminar. Problems relating to various phases of animal industries. Maximum of one hour per semester.

588-1 to 8 International Graduate Studies. University residential graduate study program abroad. Prior approval by the department is required both for the nature of the program and the number of credit hours.

590-1 to 3 Reading in Animal Industries. Reading in specialized fields under direction of approved graduate specialists.

593-1 to 3 Individual Research. Investigation of a problem in animal science under the supervision of an approved graduate specialist.

599-1 to 6 Thesis. Credit is given for a Master's thesis when it is accepted and approved by the thesis committee.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

FOOD AND NUTRITION

E-mail: fnms01@siu.edu

COLLEGE OF AGRICULTURE

Anderson, Sara Long, Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1991; 1990. Clinical dietetics.

Ashraf, Hea-Ran Lee, Associate Professor, Ph.D., Iowa State University, 1979; 1980. Food science, food technology.

Banz, William J., Assistant Professor, Ph.D., University of Tennessee, 1995; 1995. Human nutrition, nutritional physiology.

Boushey, Carol J., Assistant Professor, Ph.D., University of Washington, 1995; 1995. Nutritional epidemiology, public health nutrition.

Endres, Jeannette M., Professor, Ph.D., St. Louis University, 1972; 1975. Community nutrition, dietetics, life cycle nutrition.

Girard, T.C., Assistant Professor, M.S., University of Wisconsin-Stout, 1992; 1993. Hospitality and tourism.

Harper, Jenny M., Professor, *Emerita*, Ph.D., Cornell University, 1941; 1958.

Konishi, Frank, Professor, *Emeritus*, Ph.D., Cornell University, 1958.

Payne, Irene R., Professor, *Emerita*, Ph.D., Cornell University, 1960; 1965.

Welch, Patricia K., Professor, Ph.D., Southern Illinois University at Carbondale, 1982; 1974. Community nutrition, food service management.

The Department of Animal Science, Food and Nutrition offers a graduate program leading to the Master of Science degree in food and nutrition with a concentration in community nutrition. The curriculum for this concentration fulfills the requirements of the Association of Faculties of Graduate Programs in Public Health Nutrition.

The program is designed to meet the needs of: (a) students who have a B.S. degree in dietetics, home economics, food and nutrition or other health related fields, but are without the knowledge and skills to practice dietetics with a community nutrition concentration and (b) students who are Registered Dietitians, having worked in a hospital setting, but need additional competencies to cope with the demands of the ambulatory health care setting and community nutrition.

In addition to fulfilling the requirements for admission to the Graduate School, to be admitted to the graduate program in food and nutrition, the applicant's course work must provide an appropriate academic base for the community nutrition concentration. Unless otherwise stated, the policies of the University and of the Graduate School shall establish the minimum requirements for retention in and graduation from the program.

Requirements

Minimum requirements for the master's degree are fulfilled by the satisfactory completion of 36 semester hours of graduate credit from the following: FN 420-3, 472-3, 530-3, 540-3, 580-4, 581-1, 585-3 and 593-3 or 599-3; HED 401-3, 483-3; and EPSY 493-3, 506-4. Minimum requirements for students entering the master's degree program are: (a) meet American Dietetic Association knowledge requirements for the Didactic Program in Dietetics; (b) GPA of 3.0 (A = 4.0). Students who do not meet the undergraduate requirements may correct these deficiencies while an unclassified student or, with the consent of the department, during graduate study.

Each student, whether in the thesis or research report portion, will have a graduate committee of at least four faculty members, that includes the departmental chair and one faculty member from outside of the department. Each master's degree candidate must pass a comprehensive oral examination conducted by the graduate committee, covering all graduate work including the thesis or research report and the field experience.

Information concerning admission policies, requisites for graduation, and availability of financial assistance for graduate study in food and nutrition may be obtained from the Department of Animal Science, Food and Nutrition, Southern Illinois University at Carbondale, Carbondale, IL 62901-4417.

Courses (FN)

410-3 Nutrition Education. Course provides principles, techniques and evaluation methods necessary to incorporate food and nutrition into the educational curriculum of schools, hospitals, out-patient clinics and health agencies. Principles of interviewing, counseling and education are discussed. Prerequisite: 321.

420-3 Recent Developments in Nutrition. Critical study of current scientific literature in nutrition. Prerequisite: 320 or equivalent.

421-2 Recent Trends in Food. Critical study of current scientific literature in food. Prerequisite: 320 or equivalent.

425-3 Energy and Nutrition Utilization. The interrelationship of cell physiology, metabolism and nutrition as related to energy and nutrient utilization, including host needs and biochemical disorders and diseases requiring specific nutrition

therapy or consideration. Prerequisite: 320, Chemistry 140b, Physiology 310.

435-3 Hospitality Marketing Management. Marketing principles and practices from a hospitality management perspective. Develops the use of marketing tools as an integral part of any hospitality and tourism operation. Prerequisite: 202 and Marketing 304.

461-3 Service Organization and Management in the Hospitality Industry. Managerial aspects of the hospitality industry as related to the provision of quality service. Organizational structures, management techniques, decision-making abilities, ethics, leadership and human resource issues are examined. Prerequisite: 435 and Management 304.

470-3 Medical Nutrition Therapy. Physiological and biochemical changes associated with cer-

tain diseases and the appropriate nutrition therapy. Prerequisite: 320, Chemistry 140b and Physiology 310.

472-3 Applied Medical Nutrition Therapy. Application of nutrition principles to the management of patients with altered physiological and biochemical states. Off-campus experiences may be required. Prerequisite: 470 or concurrent enrollment and consent of instructor.

473-3 Hotel Administration. An advanced hotel administration course covering contemporary management issues such as conference management, hotel security, strategic planning, and hotel law.

474-3 Nutrition Therapy II. In depth study of the application of nutrition to the management of disease states with emphasis on current treatment and complex metabolic abnormalities. Prerequisite: 470.

480-3 Community Nutrition. Offers a study of the objectives, implementation strategies, and evaluation methods of nutrition programs in communities' health programs. Integration of nutrition into the health care delivery system at local, state and federal levels is included.

490-3 Nutrition and Growth. The study of human nutrition during each phase of the life cycle, prenatal through geriatric. Students elect at least two phases for in-depth study. A general review of basic nutrition is included. Prerequisite: consent of instructor and department chair.

530-3 Advanced Nutritional Assessment and Education. Community assessment methods, specifications or particular tools used and how these tools can be applied to particular conditions of concern in community nutrition. The methods of education for individuals and populations using dietary, biochemical, anthropometric and physical assessment data will be taught. Prerequisite: 321 or consent of instructor.

540-3 Nutrition Policy, Programs and Services. The study of policies, programs and ser-

vices concerned with prevention and treatment of nutrition problems in the population. Prerequisite: 480 and consent of instructor.

580-9 (3,3,3) Nutrition Practicum in the Community. Designed to provide practicum experiences in dietetics for students completing the Master's in Food and Nutrition and includes (a) clinical rotation, (b) management rotation, (c) public health nutrition rotation. Prerequisite: 585 and consent of instructor.

581-1 Seminar. An integration of the knowledge gained from the didactic and experiential learning prior to and after the clinical, food service and public health field experiences. Prerequisite: 480 and consent of instructor.

585-3 Advanced Community Nutrition. A presentation and examination of issues and elements in food and nutrition programs. Elements including the organization and management of quality nutrition services for the prevention of disease and promotion of health will be identified and applied to community programs. Prerequisite: 480.

593-1 to 3 Individual Research. Investigation of a problem in food and nutrition under the supervision of an approved graduate faculty member. Graded *S/U* only.

599-1 to 6 Thesis. Credit is given for a Master's thesis when it is accepted and approved by the thesis committee. Graded *S/U* only.

601-1 Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Anthropology

E-mail: cmcgee@siu.edu

COLLEGE OF LIBERAL ARTS

Adams, Jane H., Associate Professor, Ph.D., University of Illinois-Urbana, 1987; 1987. Socio-cultural anthropology, political economy, agricultural systems, history, gender roles; rural US, Latin America.

Benefit, Brenda R., Associate Professor, Ph.D., New York University, 1987; 1990. Physical anthropology, primate paleontology (especially Old World monkeys and apes), functional anatomy, diet and dentition, paleoecology; excavation of Miocene deposits at Maboko Island; Kenya.

Butler, Brian M., Adjunct Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1977; 1977. Archaeology, cultural resource management, prehistoric subsistence and settlement systems; southeastern and midwestern US.

Corruccini, Robert S., Professor, Ph.D., University of California, Berkeley, 1975; 1978. Physical anthropology, paleontology, osteology, multivariate methods, dental anthropology, epidemiology; India, Italy, Caribbean.

Ford, Susan M., Associate Professor, Ph.D., University of Pittsburgh, 1980; 1979. Physical anthropology, primate paleontology and systematics (especially New World monkeys and early anthropoids), evolutionary theory, functional and comparative anatomy; South America.

Gumerman, George J., Professor, *Emeritus*, Ph.D., University of Arizona, 1968; 1973.

Handler, Jerome S., Professor, *Emeritus*, Ph.D., Brandeis University, 1965; 1962.

Hill, Jonathan D., Associate Professor and *Director of Graduate Studies*, Ph.D., Indiana University, 1983; 1986. Ethnology, ecology, history, ethnomusicology, structural-semantic analysis; Amazon.

Maring, Ester G., Assistant Professor, Ph.D., Indiana University, 1969; 1965. Folklore, ethnology, acculturation, anthropology of religion, customary law and ethics; Southeast Asia, US Pueblos.

Maring, Joel M., Associate Professor, *Emeritus*, Ph.D., Indiana University, 1967; 1963.

McCall, John, Assistant Professor, Ph.D., Indiana University, 1992; 1995. Sociocultural anthropology, social theory, epistemology, history, ritual studies, medical anthropology, expressive culture; Africa.

Muller, Jon D., Professor, Ph.D., Harvard University, 1967; 1966. Archaeology, art analysis and culture theory; Eastern US, Africa.

Newsome, Lee Ann, *Curator* and Adjunct Assistant Professor, Ph.D., University of Florida, 1993; 1993. Archaeology, paleoethnobotany, origins of agriculture; Eastern U.S., Caribbean, neotropics.

Rands, Robert L., Professor, *Emeritus*, Ph.D., Columbia University, 1952; 1966.

Rice, Don, Professor, Ph.D., Pennsylvania State University, 1976; 1991. Archaeology, ethnohistory, tropical ecology, development of complex societies; Middle America, Andes.

Rice, Prudence M., Professor and *Chair*, Ph.D., Pennsylvania State University, 1976; 1991. Archaeology, ceramics; Mesoamerica; Andes.

Riley, Carroll L., Distinguished Professor, *Emeritus*, Ph.D., University of New Mexico, 1952; 1955.

Shimada, Izumi, Assistant Professor, Ph.D., University of Arizona, 1976; 1994. Archaeology, complex societies, technology and craft production, urban and ceremonial centers, experimental archaeology; Andes.

The Department of Anthropology offers graduate programs leading to the Master of Arts and Doctor of Philosophy degrees. Provided the student has been admitted to the Graduate School and meets its requirements, acceptance and continuation in the graduate program are at the discretion of the Department of Anthropology.

The philosophy of the Department of Anthropology is to produce students with broad backgrounds in the major sub-fields of anthropology and expertise in particular specialty areas. Within this philosophy, and subject to the requirements discussed below, the department offers a flexible program which will serve students with diverse needs and goals.

Admission

The applicant to the anthropology program must send a completed application for admission to graduate study and certified copies of all transcripts directly to the department, and must meet all Graduate School requirements for entry. Applicants whose native language is not English must achieve a TOEFL score of 600 or higher as well as take the Test of Written English (TWE), and the TWE score must be at least 5.0 (on a scale of 1 to 6) in order to gain admittance in the program. The Graduate Record Exam (GRE) is required for all U.S. applicants. Preference will be given to applicants who achieve the sum of a score of 1100 or higher on verbal and either quantitative or analytical sections of the exam. Although not required to take the GRE prior to admittance, all foreign students are strongly encouraged to take the exam prior to entering the graduate program and are required to take the exam before the end of their first year in the program.

Applicants who wish to be considered for university Graduate School fellowships must have all application materials completed by January 15. Applicants who wish to be considered for admission into the graduate program in the fall semester of the next academic year and who wish to be considered for departmental graduate assistantships must have all application materials completed by March 1. Applications not received or completed prior to March 1 will be considered only in exceptional cases, as determined by the Director of Graduate Studies in consultation with other members of the Graduate Studies Committee.

In addition, the applicant must send a completed departmental application for admission and financial aid form, personal data sheet, statement of academic and professional goals, and arrange for three letters of recommendation to be sent to the Director of Graduate Studies of the Department of Anthropology. All necessary forms will be provided to applicants by the department. No special program of previous work is required. Applicants with academic degrees in fields other than anthropology are encouraged to apply.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois Univer-

sity, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Master's Degree Program

In addition to the master's degree requirements specified in the Graduate Catalog, the following departmental requirements apply to all M.A. degree candidates:

- (1) Each student must complete ANTH 500e plus 3 of the 4 core courses, ANTH 500a, b, c, and d, with an average grade of *B* or higher, no more than one *C*, and no grade lower than *C*. These courses should be taken by new M.A. students within the first 2 terms, and must be completed by the end of the third term. Once the 4 core courses have been satisfactorily completed, performance in them together with an evaluation of the student's overall academic record will serve as a basis for departmental decision on retaining a student in the M.A. degree program.
- (2) Each student must complete 1 or more regular graduate-level courses or seminars in each of 3 subdisciplines of the student's choice (from among archaeological, linguistic, physical, sociocultural anthropology) beyond the core courses.
- (3) A further 9 hours of course work will be assigned by the student's committee after consultation with the student. These 9 hours may include up to 4 hours of graduate credit to meet tool requirements, and may not include more than 3 hours of independent study or thesis. No more than 3 hours of credit in ANTH 501, 590, 597, and 599 (thesis) may be applied toward the Graduate School requirements of 30 hours of graduate course credit and 15 hours of 500-level credit. The department requires 2 additional seminars (500-level course) beyond the 4 core courses and the thesis hours.
- (4) Each student must demonstrate a reading competence in a relevant language foreign to the student.

Students entering the program may petition to have previously taken courses accepted for credit as equivalent to core courses in cases where the equivalence can be documented.

M.A. Degree Committee, Thesis, Research Paper. Each student in the M.A. degree program will consult with the director of graduate studies and relevant faculty members to select a three-person faculty committee, which will assume major responsibility for the student's advisement. At least 2 members of this committee, including the chair, must be from the Department of Anthropology, and the third member may be selected from outside the department. At least the chair should be chosen by the end of the first year, and the entire committee by the end of the third term.

Under the direction of the M.A. degree committee, the student will complete a thesis and register for at least three hours of Anthropology 599 while doing so. A student may submit a published paper, or one accepted for publication in an approved professional journal, instead of a thesis, or may be authorized by the department to substitute a research paper for the thesis. Passing of a comprehensive examination on the student's entire program is a Graduate School requirement. One properly bound copy of the thesis, research paper, or article must be deposited with the department before the degree is granted.

An option is available, at the discretion of the departmental faculty, to allow exceptional M.A. students accelerated entry in the doctoral program at the end of their first year of M.A. study. For these students, the following are sufficient for the M.A. degree in Anthropology:

- (1) completion of 30 hours of coursework, including 21 hours at the 500 level (which can include up to 9 hours of Anthropology 598 - Research); and

- (2) a research paper (normally one prepared for a class in the student's subdiscipline) approved by the student's adviser and the Director of Graduate Studies, and submitted to the Graduate School.

No additional stipulations on the nature of the coursework (beyond the core courses) nor a language requirement are imposed.

Doctor of Philosophy Degree Program

Applicants to the Ph.D. degree program must complete the equivalent of the master's degree and apply directly to the Graduate School for admission as a doctoral student. Three letters in support of the application must be forwarded to the director of graduate studies in the Department of Anthropology. Students must also supply a statement of goals for their programs and subsequent professional careers. The department will offer an accelerated entry option to students who have been admitted at M.A. level and who are judged by the faculty of the department to be prepared to begin research at the doctoral level. Such students must complete at least one term in the M.A. degree program before being admitted at Ph.D. level, and must then meet all retention and exit requirements for the regular doctoral option. The students need not submit the application materials required of regular applicants to the Ph.D. degree program outlined above.

No later than the spring semester of the first year after being admitted to the Ph.D. degree program, students are given a written qualifying examination over their choice of 3 of the 4 major sub-fields of anthropology. Students who fail the examination will be dropped from the program. Students who pass the qualifying examination will form a faculty committee in consultation with the director of graduate studies and relevant members of the faculty. The committee must include at least 5 members of the graduate faculty, at least 3 of whom (including the chair) must be from within the department, and at least 1 from outside: the normal case will be 4 from within and 1 additional.

The requirements for the Ph.D. degree include the following:

- (1) Additional course work in anthropology and other fields within the student's interests. Of the 24 hours of credit required to establish residency, 9 must be in 500-level anthropology courses other than 500a,b,c,d,e, 501, 585, and 597. The Ph.D. committee is expected to help formulate a study program that will usually involve at least one additional academic year of full-time course work beyond the M.A. degree.
- (2) Research tool requirements. These vary and will be determined between the students and the committee, subject to approval of the chair of the department. In all cases a certified reading knowledge of at least one foreign language will be required and at least one other tool. Other possible tools could include, for example, computer science, statistics, a second foreign language, or a combination of these or others.
- (3) Administration by the committee of a three-hour special examination covering topical and geographical specialties (the preliminary or candidacy exam). The student may not take the examination until 2 years of full-time graduate work have been completed, except by authorization from the Dean of the Graduate School. The student is encouraged to take this examination by the end of three years of full-time Ph.D. level work. In evaluating the examination, the committee may pass the student, fail the student but allow retaking of the examination at a later time (as either an oral or written examination, at the discretion of the committee) or fail the student and recommend dismissal from the program. If a student fails the examination and the committee allows reexamination, it must occur within one year of the first examination and only one retake is allowed.
- (4) Dissertation prospectus approved by student's committee and formally presented to the department.
- (5) Formal experience in teaching.

Ph.D. Candidacy. After completion of the above requirements, the department will recommend a student to the Graduate School for candidacy. The candidate will design dissertation research in consultation with the committee and will undertake the research necessary to acquire the materials for the dissertation. Candidates must register for 24 hours of credit under ANTH 600.

When a final draft of the dissertation has been accepted by the Ph.D. committee, an oral defense of the dissertation and all supporting work will be held in accordance with Graduate School requirements. After a successful dissertation defense and completion of final revisions of the text, the student must submit two copies of the dissertation to the Graduate School in accordance with its guidelines, and a properly bound copy to the Department of Anthropology.

Courses (ANTH)

402-3 People and Culture. Offered primarily for non-anthropology majors. Focuses on the nature of culture, cultural processes, and cultural change with emphasis on social, political, economic, artistic, religious and linguistic behavior of humans as individuals and in social groups.

404-3 Art and Technology in Anthropology. An introduction to the basic ways in which people utilize the natural resources of their habitat to meet various needs, such as food, shelter, transportation and artistic expression. The nature of art, its locus in culture and its integration into technical society will be considered.

406-3 Conservation Archaeology. The method and theory of archaeology in relationship to local, state and federal laws regarding the protection and excavation of antiquities. Emphasis is on problem oriented survey and excavation, as well as the preparation of archaeological contracts and the writing of reports to satisfy statutes involving environmental concerns. Prerequisite: 300c or 400c or consent of instructor.

410A-3 Applied Anthropology. The practical applications of theoretical social anthropology. Problems of directed culture change are examined from an anthropological perspective as they apply to the work of the educator, social worker, extension agent, administrator and others who are attempting to guide change in the life ways of others in Western culture and the third world. Prerequisite: none. 300d recommended for undergraduates.

410B-3 Educational Anthropology. An examination of the cultural processes of formal and informal education, the use of anthropological premises in educational program design, bicultural-bilingual education programs, comparative American-non-American systems and the teaching of anthropology. Prerequisite: none. 300d recommended for undergraduates.

410C-3 Economic Anthropology. The study of non-Western economic systems. Prerequisite: none. 300d recommended for undergraduates.

410D-3 Anthropology of Folklore. A comparative study of the role of folklore in various cultures of the world, with emphasis upon nonliterate societies. Analysis of motifs, taletypes, themes and other elements; comparisons between nonliterate and literate groups. Prerequisite: none. 300d recommended for undergraduates.

410E-3 Anthropology of Law. Anthropological thought on imperative norms, morality, social

control, conflict resolution and justice in the context of particular societies, preliterate and civilized. Law of selected societies is compared to illustrate important varieties. Prerequisite: none. 300d recommended for undergraduates.

410F-3 Anthropology of Religion. A comparative study of (religious) belief systems, with emphasis upon those of non-literate societies. Examination of basic premises and elements of these belief systems, normally excluded from discussions of "Great Religions". Prerequisite: none. 300d recommended for undergraduates.

410G-3 Psychological Anthropology. Similarities and differences in personality structures cross-culturally including the historical development of this as an anthropological subdiscipline. Prerequisite: none. 300d recommended for undergraduates.

410H-3 Ethnomusicology of Oceania, Asia and Africa. A survey of theory, method, structure, organology and cultural context of the ethnomusicology of Oceania, Asia and Africa.

410I-3 Ethnomusicology of Middle East, Europe and the New World. A survey of theory, method, structure, organology and cultural context of the ethnomusicology of Europe and the New World.

410J-3 Kinship and Social Organization. Universal features of non-Western systems of kinship terminology and social organization. Topics include the structure and functioning of kinship systems, lineages, clans, sibs, phratries, moieties and tribal units. Prerequisite: none. 300d recommended for undergraduates.

410K-3 Ecological Anthropology. An examination of the relationship of past and present human populations in the context of their natural and social environments. Prerequisite: 300c and 300d or equivalent.

410M-3 Healing and Culture. This course examines systems of healing and medicine from an anthropological perspective. The theory and practice of medicine in different cultures, including Western biomedicine, are considered. Particular attention is given to the ways in which medical knowledge gains legitimacy in different social contexts and the problems which arise in culturally heterogeneous arenas when different medical paradigms contend for legitimization. Prerequisite: 300d or consent of instructor.

425-3 Cognitive Anthropology. The theory of culture as cognitive organization is explored.

Among the topics are: Formal analysis of lexical domains, folk classifications and strategies, the problem of psychological validity, linguistic determinism and relativity, biogenetic and psycholinguistic bases of cognition and the "new ethnography."

430A-3 Archaeology of North America. Detailed study of the early cultures of North America. Emphasis on the evolutionary cultural development of North America. Prerequisite: 300c or 400c or consent of instructor.

430B-3 Archaeology of Meso-America. Detailed study of the early cultures of Meso-America with emphasis on the evolutionary cultural development of Meso-America. Prerequisite: 300c or 400c or consent of instructor.

430E-3 Archaeology of the Eastern Woodlands. Detailed study of the early cultures of the North American Eastern Woodlands with emphasis on the evolutionary development of cultures. Prerequisite: 300c, 302, 400c or 430a or consent of instructor.

430F-3 Archaeology of South America. Survey of the prehistory and ethnohistory of South America, including the peopling of the South American continent, the development of early cultures, the rise and fall of Andean and empires and the impact of Spanish contact and conquest. Prerequisite: 300c or 400c or consent of the instructor.

440A-3 The Fossil Evidence for Human Evolution. An advanced consideration of the fossil evidence for human evolution and evaluation of the various theories regarding the course of human evolution. Prerequisite: 300a or consent of instructor.

440B-3 Race and Human Variation. A consideration of the range, meaning and significance of contemporary human biological variation, including evolutionary and adaptive implications and the utility of the race concept. Prerequisite: 300a or consent of instructor.

440C-3 Context of Human Evolution. This course will provide an ecological, behavioral, geological, geographic and theoretical context from which to understand the evolutionary history of modern humans. The course is designed to complement Anthropology 440a.

441-6 (3, 3) Laboratory Analysis in Archaeology. (a) Emphasizes methods of analysis in archaeology as part of a larger research design created by the student. May be taken independently or as a follow-up to 496. (b) Emphasizes technical methods of the physical and natural sciences in archaeology, as used in environmental reconstruction, dating and for the investigation of production and exchange.

442-1 to 12 Working with Anthropological Collections. Management, curation and analysis of anthropological collections as part of a research project created by the student. May be taken independently or as a follow-up to 450, 495, 496 or 597.

444-3 Human Genetics and Demography. A course in human genetics with an emphasis on population genetics and demography of modern and ancient human populations. Prerequisite: 300a, 400a or consent of instructor.

450-3 Museum Studies. A detailed study of museum operation to include methodology and display. Practical museum work will be stressed.

455-3 to 27 (3 per topic) Topics in Bioanthropology. Intensive study of one of the major subfields within biological anthropology. Topical areas include: (a) Dental Anthropology. (b) Laboratory Methods. (c) Primate Behavior and Ecology. (d) Quantitative Methods. (e) Biomedical Anthropology. (f) Human Growth, Development and Adaptation. (g) Primate Biology and Evolution. (h) Osteology. (i) Comparative and Functional Primate Anatomy.

460-1 to 12 Individual Study in Anthropology. Guided research on anthropological problems. The academic work may be done on campus or in conjunction with approved off-campus (normally field research) activities.

470-3 to 24 People and Cultures. A survey of the prehistory, cultural history and contemporary cultures of the area in question. Topical emphasis may vary from course to course and year to year. (a) Africa, (b) Asia, (c) Caribbean, (d) Europe, (e) Latin America, (f) Near East and North Africa, (g) North America, (h) Oceania. Prerequisite: a basic acquaintance with geography and history of the areas.

490-3 Field Methods and Analysis in Linguistic Anthropology. Includes theoretical background and a project in the linguistic aspects of culture. Prerequisite: 300b, 301.

495-3 to 8 Ethnographic Field School. Apprentice training in the field in ethnographic theory and method. Students will be expected to devote full time to the field school. Prerequisite: consent of instructor.

496-1 to 8 Field School in Archaeology. Apprentice training in the field in archaeological method and theory. Students will be expected to be in full-time residence at the field school headquarters off campus. Prerequisite: consent of instructor.

500A-3 Theory and Method in Biological Anthropology. Current topics in biological evolution and variation, including the theoretical and methodological background to each. Topics will be drawn from the four major areas of physical anthropology: genetics and evolutionary theory, primate studies, human fossil record and human variation. Prerequisite: 300a for undergraduates or consent of instructor.

500B-3 Theory and Method in Linguistic Anthropology. History of linguistics and anthropology. Description and analysis of languages. Origin, development and acquisition of language. Theory of symbolic systems. Human and animal communication. Historical linguistics. Languages in culture and society. Prerequisite: 300b for undergraduates or consent of instructor.

500C-3 Theory and Method in Archaeology. Overview of the currents and controversies in anthropological archaeology in their historical and theoretical context. Topics include history of archaeological theory, explanation in archaeology, limitations of the archaeological record and archaeological approaches to the study of cultural variation. Prerequisite: 300c for undergraduates or consent of instructor.

500D-3 Theory and Methods in Sociocultural Anthropology. This course is designed to enable students to identify, define and critically understand the major theories and methods of contemporary sociocultural anthropology. The course is

organized into three general parts, reflecting broad areas of theoretical inquiry which have expanded most rapidly in anthropology since 1960: (1) ecological, economic and other materialist approaches; (2) cognitive, symbolic and other interpretive approaches; and (3) recent and ongoing research strategies, including critical and historical approaches. Prerequisite: 300d for undergraduates or consent of instructor.

500E-3 History of Anthropology. The development of anthropological thought in the four subfields of the discipline (sociocultural, physical, linguistics, archaeology). Emphasis is on concepts, ideas and work and major practitioners of the early 19th to the middle of the 20th centuries, on the major trends that have led to specialties found in anthropology today. The present status of anthropology as an academic discipline is briefly explored, and an attempt is made to assess the future of the discipline in terms of intellectual and practical concerns.

501-6 (3,3) Practicum in Educational Anthropology. Provides anthropology students actual classroom experience in a lower division anthropology course. Students will be involved in the teaching of designated courses. The instructor of record will meet with practicum members on a regular basis, critique their lectures, and together with them work out problems and plan future direction of the course. Graded *S/U* only. Prerequisite: Ph.D. level or successful completion of core course requirements at the M.A. level.

510-3 to 6 (3 per topic) Seminar Archaeology of North America. Seminar studying issues concerning the prehistoric and historic inhabitants of North America north of Mexico. From year to year, the precise areal and topical coverage will vary, as will the instructors. Students should consult department about subjects to be offered.

511-2 to 6 (2 to 3 per topic) Seminar in Meso-American Archaeology. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

513-3 to 9 (3 per topic) Seminar in Archaeology. Seminars in varying topics in archaeology. Students should consult department about subjects to be covered.

514-3 to 6 (3 per topic) Seminar in South American Archaeology. Seminar will focus upon archaeological investigations of specific cultures, regions, time periods or cultural processes in South America. From year to year the areal and topical coverage of the course will vary as may the instructor. Students should consult the department about subjects to be covered. Prerequisite: 430f, 500c, 500d or 500e or consent of instructor.

515A-3 Seminar in Social-Cultural Anthropology. Discussion of anthropological concepts of social structure and related topical themes, based upon extensive reading selected from a large number of sources. Prerequisite: 500e or consent of instructor.

515B-3 Seminar in Social-Cultural Anthropology. Intensive analysis of a limited set of monographs organized around a theoretical problem or set of problems. Prerequisite: 500E or consent of instructor.

516-3 to 9 (3 per topic) Seminar in the Archaeology of Complex Societies. Seminar reviews selective literatures dealing with theoretical and methodological issues in archaeological investigation of pre-industrial, regional complex societies. From year to year the topical coverage of this course will vary as will the instructors. Students should consult the department about subjects to be offered. Prerequisite: 500c, 500d or 500e; or consent of the instructor.

520-2 to 6 (2 to 3 per topic) Seminar in New World Ethnology. From year to year, the areal and topical coverage of this course will vary, as will instructors. Students should consult the department about subjects to be covered.

521-2 to 6 (2 to 3 per topic) Seminar in Ethnology of Latin America. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

522-2 to 6 (2 to 3 per topic) Seminar in the Anthropology of Oceania. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

523-2 to 6 (2 to 3 per topic) Seminar in Anthropology of Africa. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

530-3 to 9 (3 per topic) Seminar in Paleoanthropology. Topics will be drawn from any dealing with the fossil and/or contextual evidence for human evolution (e.g., *The Place of Neandertals in Human Evolution*; *Taphonomy and Paleoecology*; *Origins of Bipedalism*). From semester to semester, the topical coverage will vary, as will the instructor. Students should consult the department about subjects to be covered. Prerequisite: 440a or 440c or consent of instructor.

532-3 to 9 (3 per topic) Seminar in Human Biological Variation. Topics will be drawn from any of the areas of biological variation among humans (e.g., *Comparative Epidemiology*, *Human Sociobiology*, *Demography and Paleodemography*, or *Multivariate Pattern Recognition*). From semester to semester, the topical coverage will vary, as will the instructor. Students should consult the department about subjects to be covered. Prerequisite: 440b or consent of instructor.

534-3 to 9 (3 per topic) Seminar in Evolutionary Theory. Seminars will be constructed around various theoretical and/or substantive issues in current biological evolutionary theory (e.g., *Issues in Paleobiology*, *Evolution At and Above the Species Level* or *Phylogenetic Systematics*). From semester to semester, the topical coverage will vary, as will the instructor. Students should consult the department about subjects to be covered. Prerequisite: 500a or consent of instructor.

536-3 to 9 (3 per topic) Seminar in Primate Behavior and Ecology. Topics will vary among theoretical and substantive issues in primate behavior and ecology (e.g., *Primate Social Structure*, *Socioecology*, *Diet*, *Locomotion and Foraging Strategies*, or *Reproductive Strategies in Primates*). From semester to semester, the topical coverage will vary, as will the instructor. Students should consult the department about sub-

jects to be covered. Prerequisite: 455c or consent of instructor.

538-3 to 9 (3 per topic) Seminar in Primate Evolution. Topics will vary among substantive (taxonomic), theoretical, and contextual issues in primate evolution (e.g., *Catarrhine Evolution*, *Anthropoid Origins*, *Molecular vs. Fossil Evidence for Hominoid Phylogeny* or *The Role of Body Size and Allometry in Primate Evolution*). From semester to semester, the topical coverage will vary, as will instructor. Prerequisite: 455g or consent of instructor.

540-3 Pidgin and Creole Languages. (Same as Linguistics 507.) Survey of the world's pidgins and creoles, with emphasis on the English-based Atlantic creoles. Comparison of creolization with first and second language acquisition, and with the origin and evolutionary development of human language. Prerequisite: one previous course in linguistics or consent of instructor.

545-2 to 6 (2 to 3 per topic) Seminar in Anthropological Linguistics. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

560-2 to 6 (2 to 3 per topic) Seminar in Comparative Social Organization. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

562-2 to 6 (2 to 3 per topic) Seminar in the Anthropology of Contemporary Peoples. From year to year, the areal and topical coverage of this course will vary, as will the instructor. Students should consult the department about subjects to be covered.

565-2 to 6 (2 to 3 per topic) Seminar in Culture Change and Development. From year to year, the areal and topical coverage of this course will vary, as will the instructor. Students should consult the department about subjects to be covered.

567-2 to 6 (2 to 3 per topic) Seminar in Anthropological Theory and Method. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

568-3 to 12 (3 per topic) Seminar in Analytical Methods in Archaeology. Seminar in definition, measurement and description of data in relation to archaeological research problems. From year to year, the topical coverage of this course will vary as will the instructors. Students

should consult the department about subjects to be offered. Prerequisite: permission of instructor.

576-2 to 6 (2 to 3 per topic) Seminar in Anthropological Research Design. Supervised training in the preparation of anthropological research designs. Requirements will include completed research proposals involving the relation of data to theory and results in the general sub-areas of archaeological, physical, social and linguistic anthropology. Coverage will vary. Students should consult the department.

581-2 to 6 (2 to 3 per topic) Seminar in Anthropology. From year to year, the areal and topical coverage of this course will vary, as will the instructor. Students should consult the department about subjects to be covered.

585-1 to 12 (1 to 3 per semester) Readings in Anthropology. Guided readings to cover special topics and fill gaps in the student's specialized anthropological background, to be arranged with department.

590-1 to 12 Internship. This provides a supervised experience in a professional setting, generally entailing supervisory and/or administrative duties. Prerequisite: Written approval from department.

595-3 Field Methods in Ethnology. Anthropological methods of inquiry and documentation of cultures and habitat together with appropriate instruction in the technique of field work such as photography and sound recording.

597-1 to 12 Fieldwork in Anthropology. To be arranged with department. Graded *S/U* only.

598-1 to 9 Research. This course is restricted to students to be accelerated from the M.A. to the Ph.D. program (at the discretion of the faculty). Its purpose is to allow the student, under the guidance of his/her major advisor, to complete the research paper and other requirements of an M.A. degree. Graded *S/U* only. Prerequisite: Consent of department and departmental offer of accelerated entry to Ph.D. program in Anthropology.

599-1 to 6 Thesis.

600-1 to 32 (1 to 12 per semester) Dissertation.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Applied Linguistics

(See Linguistics for program description.)

Art

E-mail: ge1085@siucvmb.siu.edu

COLLEGE OF LIBERAL ARTS

Abrahamson, Roy E., Associate Professor, Ed.D., Columbia University, 1965; 1965. Art education.

Addington, Aldon M., Associate Professor, M.F.A., Cranbrook Academy of Art, 1966; 1967. Sculpture.

Archer, Richard, Assistant Professor, M.S., Governor's State University, 1979; 1968. Design.

Bernstein, Lawrence A., Associate Professor, *Emeritus*, M.F.A., Cranbrook Academy of Art, 1953; 1962.

Boysen, Bill H., Professor, M.F.A., University of Wisconsin, 1966; 1966. Ceramics, glassblowing.

Briggs, Larry S., Associate Professor, B.F.A., University of Oklahoma, 1956; 1985. Visual communications.

Busch, Larry, Associate Professor, M.S., Southern Illinois University at Carbondale, 1970; 1970. Design.

Chapman, Gretel, Associate Professor, Ph.D., University of Chicago, 1964; 1984. Art history.

Croston, Robert, Associate Professor, M.S., University of Massachusetts, 1981; 1992. Design.

Deller, Harris, Professor, M.F.A., Cranbrook Academy of Art, 1973; 1975. Ceramics.

Feldman, Joel B., Professor, M.F.A., Indiana University, 1967; 1973. Printmaking, lithography.

Fink, Herbert L., Distinguished Professor, *Emeritus*, M.F.A., Yale University, 1958; 1961.

Greenfield, Sylvia R., Professor, M.F.A., University of Colorado, 1967; 1968. Drawing and painting.

Jackson, Jed, Assistant Professor, M.F.A., Cornell University, 1980; 1990. Drawing and painting.

Kington, L. Brent, Professor, M.F.A., Cranbrook Academy of Art, 1961; 1961. Metals, blacksmithing.

Lintault, M. Joan, Professor, M.F.A., Southern Illinois University at Carbondale, 1962; 1973. Fibers and weaving.

Mavigliano, George J., Associate Professor, M.A., Northern Illinois University, 1967; 1970. American art and architecture.

Mawdsley, Richard W., Professor, M.F.A., University of Kansas, 1969; 1978. Metalsmithing.

Monteith, Jerry, Assistant Professor, M.F.A., Cranbrook Academy of Art, 1978; 1990. Sculpture.

Onken, Michael O., Associate Professor, M.A., Northern Illinois University, 1966; 1968. Drawing and painting.

Palmer, Erin L., Assistant Professor, M.F.A., Yale School of Art, 1993; 1993. Painting and drawing.

Paulson, Robert L., Professor and *Director*, M.F.A., University of Wisconsin, 1967; 1967. Drawing and painting.

Saunders, Ann, Associate Professor, M.F.A., Syracuse University, 1984; 1986. Visual communications.

Shay, Edward H., Professor, M.F.A., University of Illinois, 1971; 1978. Drawing, painting, and printmaking.

Sullivan, James E., Associate Professor, M.A., University of California, Los Angeles, 1965; 1969. 19th century and modern art and interdisciplinary studies.

Sullivan, Milton F., Professor, *Emeritus*, M.A., Columbia University, 1951; 1952.

Unger, Gotz, Associate Professor, Master of Design, Royal College of Art, 1978; 1994. Product design.

Walsh, Thomas J., Professor, M.F.A., University of Michigan, 1962; 1967. Sculpture and foundry.

Youngblood, Michael, Associate Professor, Ph.D., University of Oregon, 1975; 1979. Art education.

Zivkovich, Kay M. Pick, Assistant Professor, M.F.A., Southern Illinois University at Carbondale, 1973; 1989. Visual communications.

In all of its graduate studio programs, the School of Art and Design strives to maintain a vital, creative ambience in which emerging artists with strong motivation may develop, through intensive studio practice and appropriate scholarly support, a clear, mature, and professional focus to their creative life. The core of any program is the in-depth studio practice of individual studio disciplines and frequent, sustained contact with working professional faculty and fellow students. This work is supported and extended through formal studio course work, studies in the history of art, and through access to the many resources and opportunities apparent in a large multi-purpose university.

M.F.A. Degree Program Description

The School of Art and Design offers graduate studies leading to the Master of Fine Arts degree with a major in art and offers studies supporting a teaching specialty in art for the Master of Science in Education degree with a major in secondary education. The student is expected to select an area of emphasis

(studio or art education), and a program will be planned in consultation with the major professor in that area.

Admission

An undergraduate degree in art or art education, or the equivalent in course work or experience if the undergraduate degree is in another discipline, is required for admission into the Master of Fine Arts degree program. The student must also submit transcripts of all previous undergraduate work, present slides or a portfolio of creative work, and may submit letters of recommendation.

In most cases an undergraduate degree in art education is required for admission into the program constituting a teaching specialty in art for the Master of Science in Education degree majoring in secondary education. Any exception to these requirements must be approved by the faculty in the studio or art education fields and by the director of the School of Art and Design.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

M.F.A. Degree

A minimum of 60 semester credit hours is required for the Master of Fine Arts degree with a major in art. All hours that are to count toward graduation must have the approval of the student's major adviser in the studio area of emphasis. Students may emphasize the following areas in studio: drawing, painting, printmaking, sculpture/foundry, ceramics/glass, metalsmithing/blacksmithing, and fibers/weaving. The length of time required to complete a 60 semester-hour program is usually 5–6 semesters or 3 academic years. Most graduate students are in residence for at least 4 semesters. Programs of residency must have the approval of the student's major adviser. Required hours are distributed as follows: 26 hours in the primary studio emphasis, 12 hours in art history or related subjects, 6 hours in thesis or terminal project work, and 16 hours of elective study of which 9 hours must be in studio disciplines. The remaining hours may be elected from any area within the School of Art and Design or in the University at large.

In addition to the completion of course work, all candidates for the M.F.A. degree must, during the last semester of academic work, present a graduate exhibition, present a terminal project or a written thesis, and pass an oral examination. The terminal project is a creative activity presented in lieu of the written thesis, and in practice, the graduate exhibition is considered to satisfy the terminal project requirement.

Graduate education in the studio areas of emphasis is expensive, and because of the individual nature of creative work, it is virtually impossible to predict the exact cost for each student. The School of Art and Design provides the faculty, and the studio and shop facilities that are necessary to the programs offered, but all other costs, especially materials, that are considered necessary to the successful completion of a graduate program are borne by the student.

Art as a Teaching Specialty

The Master of Science in Education degree with a major in secondary education with a teaching emphasis in art requires a minimum of 30 semester hours of graduate credit. Two art education program options are available: (1) the research option for those interested in research, supervision, or eventual doctoral studies, and (2) the teacher-studio option for improving teaching and studio skills.

The research option requires 13 hours in education, 11 hours in art education, 3 hours of thesis (or research paper) with the remaining hours for art electives.

The teacher-studio option requires 13 hours in education, 6 hours in art education, 3 hours for thesis (or research paper) with the remaining hours for art electives. All hours that are counted toward graduation and election of either a thesis project or a research paper must have the approval of the art education graduate adviser.

Courses (AD)

Art studio courses (400-499, 500-598) are directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes and ideas that form the content and experience of the major field.

Courses in this department may require the purchase of supplemental materials. Permission of the major adviser in each studio is required for enrollment in studio courses.

400D-3 to 15 Advanced Drawing I. Independent study in drawing. Studio fee: \$5. Incidental expenses may exceed \$100 for each section. Prerequisite: consent of major adviser.

401D-3 to 15 Advanced Painting I. Independent study in painting. Studio fee: \$5. Incidental expenses may exceed \$50. Prerequisite: consent of major adviser.

402D-3 to 15 Advanced Printmaking I. Independent study in printmaking. Studio fee: \$10 per credit hour. Incidental expenses may exceed \$50. Prerequisite: consent of major adviser.

403D-3 to 15 Advanced Sculpture I. Independent study in sculpture. Studio fee: contingent upon type of materials used by student. Incidental expenses may exceed \$75. Prerequisite: consent of major adviser.

404D-3 to 15 Advanced Drawing I. Independent study in ceramics. Studio fee: \$27 per credit hour enrolled. Incidental expenses may exceed \$20. Prerequisite: consent of major adviser.

405D-3 to 15 Advanced Metalsmithing I. Independent study in metalsmithing. Studio fee: \$10 per credit hour enrolled. Incidental expenses may exceed \$75. Prerequisite: consent of major adviser.

406D-3 to 15 Advanced Fibers I. Independent study in fibers. Studio fee: \$17 per credit hour enrolled. Incidental expenses may exceed \$75. Prerequisite: consent of major adviser.

407-3 Ancient Art. Ancient art of the Mediterranean area from the Egyptians to the end of the Roman Empire. A survey of the major cultures, with emphasis upon visual analysis, media and techniques, function and iconography. Field trip required. Documented research paper on an aspect of ancient art required for graduate credit. Prerequisite: 207a or consent of instructor.

414-3 to 21 Glass I. A studio course designed for the beginning glass student focusing initially upon basic "flat glass" and cold working techniques and processes. Coursework includes projects intended to familiarize the student with designing and executing products in stained glass. Student will be introduced to forming techniques in glassblowing. Studio fee \$20 per credit hour enrolled. Prerequisite: consent of instructor.

415-4 A Creative Look at Reclamation Possibilities for Massively Disturbed Land. Presents the possibility that massively disturbed areas can be aesthetic resources if potential inherent in these sites can be recognized and addressed. Seminar/lecture/studio format with se-

lected lectures given by invited speakers. Discussions include recognition of massive land disturbance; reclamation as a concept; environmental art and design; the questions a potential developer or designer of disturbed land should ask and where they might look for expert advice; and group critiques on student studio projects. Studio projects will involve the visualization in two- and three-dimension formats of plans for the reclamation of the students' chosen site with accompanying documentation.

417-3 Medieval Art. Medieval art from the Fourth to the Fifteenth Century in Western Europe. Examination of selected art objects in terms of media and techniques, iconography, function and cultural milieu. Field trip required. Documented research paper on an aspect of medieval art required for graduate credit. Prerequisite: 207a or consent of the instructor.

427-3 Renaissance Art. An examination of various topics appropriate to a study of Renaissance art, both Northern and Italian, during the Fifteenth and Sixteenth Centuries in Europe. The emphasis is on a range of art history problems and methods of approach. Field trip required. Prerequisite: 207a or consent of instructor.

437-3 Baroque and Rococo Art. An examination of various topics appropriate to a study of Baroque and Rococo art in Western Europe. Emphasis upon a range of art historical problems and methods of approach. Field trip required. Prerequisite: 207a or b or consent of instructor.

447-3 Introduction to Museology. A survey of museum and gallery techniques (emphasis upon practical exhibit development) which will involve answering questions concerning contractual agreements, taxes, insurance, packing, shipping, exhibit design and installation, record systems, general handling, public relations and sale of art works directed toward problems encountered by the artist outside the privacy of the studio. Prerequisite: art major or consent of instructor.

448-3 Art of Tribal Cultures. Covers a broad range of arts of Africa, Native North America, Pre-Columbian America and Oceania; primarily sculpture, textiles, masking and performance, body decoration and textiles, architecture and ceramics of small-scale village societies.

457-3 Women in the Visual Arts. (Same as Women's Studies 427.) Consists of a survey of women's contributions and participation in the visual arts from the middle ages through the Twentieth Century. Through lecture, discussion and

research, painting, sculpture, architecture, crafts, film, photography and other forms of visual art will be covered. Screening fee: \$10.

458-3 African Arts. Covers a broad range of the arts primarily of west and central Africa, as well as north, south, and east Africa: includes sculpture, masking and performance, body decoration and textiles, architecture. Shows how arts are used in the daily life of traditional village societies in these areas.

467-3 Critical Issues in Contemporary Art. An examination of the style and meaning of contemporary art in relation to the current political, social and cultural issues. Will include visual arts, architecture, and communications media. Prerequisite: 207a,b or consent of instructor.

468-3 Pre-Columbian Art. Covers architecture, textiles, pottery, metal and 2-D arts of Meso-, Central and South America during the Pre-Columbian era. Also includes hieroglyphic and calendrical systems and some Post-Columbian era arts as well.

477-3 American Art of the Thirties. A socio-political and artistic study of American art during the decade of the Great Depression. Course material will be divided in three parts: (1) a survey of art trends during the Thirties concentrating on traditional art forms such as painting, sculpture and architecture; (2) an investigation into government-subsized art programs; and (3) recent governmental and corporate patronage of the arts through such programs as the National Endowment for the Arts. Prerequisite: 207a,b or consent of instructor.

487-6 (3, 3) American Art. (a) U.S. art to 1913. Study of American art from native Indian settlements through Colonial period to 20th Century. Attention to such art forms as painting, sculpture, and architecture, as well as the rich varied Indian folk and craft traditions. (b) U.S. art since 1876. Study of American art and design from Industrial Revolution to present. Attention to such traditional art forms as painting, sculpture, and architecture, as well as the many facets of modern design. Prerequisite: 207a,b or consent of instructor.

497-3 to 6 (3 per topic) Problems in Art History. A close examination of selected categories of works of art from various periods, media and cultures as illustrative of particular art historical problems. Topics will vary and include (a) Portraiture. (b) Landscape and still life. (c) Narrative. (d) Other selected topics. Sections a through c may be taken only once each, section d may be repeated as topics vary. Art historical perspectives to include formal analysis, iconography, art theory, social history, connoisseurship. Prerequisite: 300-level art history course or consent of instructor.

499-1 to 21 Individual Problems. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes and ideas that form the content and experience of the student's major field. Designed to adapt to students' individual needs in problem research. Prerequisite: senior standing in the School of Art and Design, a 3.0 average, and consent of instructor.

500-3 to 21 Advanced Drawing II. A studio directed toward individual research in the student's

major field. Emphasis is placed upon the historical materials, processes and ideas that form the content and experience of the student's major field. Prerequisite: consent of major adviser.

501-3 to 21 Advanced Painting II. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes and ideas that form the content and experience of the student's major field. Prerequisite: consent of major adviser.

502-3 to 21 Advanced Printmaking II. Advanced studio course in printmaking directed toward individual research in the student's choice of print media. Emphasis is on the processes which lead to the formation of personal content. Studio fee: \$13 per credit hour enrolled. Prerequisite: graduate status and consent of instructor.

503-3 to 21 Advanced Sculpture II. Advanced studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes and ideas to form content in the student's medium. Incidental expenses may exceed \$100. Prerequisite: consent of major adviser.

504-3 to 21 Advanced Ceramics II. Art studio course directed toward individual research in the student's major field. Coursework is designed to assist the student's discovery of ceramic form and content as applied to personal artistic expression. Emphasis upon the development of creative studio research techniques and seminar-type experiences exploring historical and contemporary issues as they relate to ceramic art. Studio fee: \$43 per credit hour enrolled. Incidental expenses may exceed \$50. Prerequisite: consent of major adviser.

505-3 to 21 Advanced Metalsmithing II. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes and ideas that form the content and experience of the student's major field. Studio fee: \$10 per credit hour enrolled. Prerequisite: consent of major adviser.

506-3 to 21 Advanced Fibers II. Art studio course directed toward individual research in the student's major field. Coursework is designed to assist the student's discovery of fibers and content as applied to personal artistic expression. Emphasis upon development of creative studio research techniques and seminar-type experience exploring historical and contemporary issues as they relate to fibers. Studio fee: \$17 per credit hour enrolled. Prerequisite: consent of major adviser.

507-3 to 6 (3,3) Readings in Art History. Individual assistance and investigation to discover new meaning and involvement in graduate studio work through the literature of art.

508-2 to 9 (2 to 3, 2 to 3, 2 to 3) Research in Art Education. Each student demonstrates via class presentations, a term paper, surveys of research reports and formulations of research designs, an understanding of advanced art education research procedures, analyses and implications; new process and product research techniques; and research in artistic creativity, perception, and the evolution of art images. Prerequisite: consent of instructor.

514-3 to 21 Glass II. An advanced glass course intended to increase the student's knowledge of

the potential of glass as a medium of creative expression and to refine studio skills associated with the material. Coursework will include the investigation of historical and contemporary solutions to aesthetic problems related to the medium. Studio fee \$30 per credit hour enrolled. Prerequisite: consent of major adviser or consent of instructor.

517-3 to 6 (3,3) Concepts in Art History. Group seminar to discuss and present aspects of the history of art in relation to both traditional and contemporary artistic concerns.

518-2 to 9 (2 to 3, 2 to 3, 2 to 3) Seminar in Art Education. Each student shows evidence, via class presentation, a term paper and evaluations of individual and group projects, an understanding of important literature; the latest developments and trends in philosophical, psychological and sociological concepts in art education and

methods for developing rationale for art curriculum and instruction programs. Prerequisite: consent of instructor.

599-2 to 6 Thesis. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes and ideas that form the content and experience of the student's major field.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Behavior Analysis and Therapy

(See Rehabilitation Institute for program description.)

Biological Sciences

E-mail: biological-sciences@cos.siu.edu

The biological sciences program provides broad interdisciplinary graduate training in biology leading to the Master of Science degree. This interdisciplinary program utilizes the faculty, facilities and courses of the Departments of Plant Biology, Microbiology, Physiology and Zoology. The program is designed for those students who desire a broad-based curriculum rather than an in-depth concentration in only one of the biological sciences.

Requirements for Admission

All applicants must submit an application to the biological sciences program. Applicants must meet the minimal requirements of the Graduate School before being considered for admission to Biological Sciences. A completed application includes the program application form, three letters of recommendation, transcripts of all previous college credit, and scores from the general aptitude portion of the Graduate Record Examination (GRE).

Prerequisites for graduate training in the biological sciences program include a bachelor's degree with the following academic background.

1. 37 semester hours of undergraduate courses distributed among any three of the biological science areas (plant biology, microbiology, physiology and zoology).
2. Organic chemistry with laboratory.
3. Physics.
4. Statistics.

(NOTE: Applicants deficient in these background areas may be admitted, but any deficiency must be successfully completed before the third semester of registration in the program.) Application forms are available from: Director, Biological Sciences Program, Life Science II, Rm. 148, SIUC, Carbondale, IL 62901-6505.

Advisement

After admission to the program, a student must consult the director of the biological sciences program for counsel and assistance prior to registration.

No later than the end of the first semester of registration in the program, the student must arrange with a faculty member of one of the four biological science departments to serve as the research adviser.

Following selection and approval of the research adviser, a research and advisory committee is to be recommended to the director of the biological sciences program for approval by the dean of the Graduate School. The research and advisory committee shall consist of a minimum of three members, each representing a different biological science department, with the research adviser serving as chair. The director of the biological sciences program serves as an *ex-officio* member of all committees.

A program of course work must be approved by the research and advisory committee and filed with the director no later than the eighth week of the second semester of registration in the program. Any deviation from the course work program during the student's tenure must be approved by the research and advisory committee and filed with the director. The research plan for the thesis or research paper must be approved by the research and advisory committee and filed with the director no later than the end of the second semester of registration.

Non-Thesis Option

A total of 40 semester hours of 400- or 500-level courses is required with the following provisions:

1. A minimum of 26 semester hours of formal graded courses in the biological sciences required with no less than eight semester hours including one 400- or 500-level laboratory course in each of three of the biological sciences departments.
2. At least 15 semester hours of the total required must be at the 500 level.
3. At least one semester of seminar in each of three of the biological science departments must be attended for credit.
4. An overall 3.0 grade point average ($A = 4.0$) must be maintained with no course in which the grade is less than a *C* counting toward the degree requirements.
5. A research paper is required demonstrating the ability to collect and analyze data and to report interpreted results in a scientific manner. A library research problem is acceptable, but must include an original contribution of analysis and interpretation. No less than three nor more than six semester hours of "Research" may be counted for credit in meeting requirements. (*Only those courses listed as "Individual Research", "Introduction to Research", etc. may be taken for credit. "Thesis Research" may not be used for this requirement.*)
6. A final oral examination is required, consisting of two parts:
 - a. a public presentation of the research paper and
 - b. a closed session of inquiry by the student's Research and Advisory Committee.

Thesis Option

A total of 30 semester hours of 400- or 500-level courses is required with the following provisions:

1. A minimum of 21 semester hours of formal graded courses in the biological sciences is required with no less than six semester hours coming from each of three of the biological science departments.
2. A least 15 semester hours of the total required must be at the 500 level.
3. At least one semester of seminar in two of the four biological science departments must be attended for credit.

4. An overall 3.0 grade point average ($A = 4.0$) must be maintained with no course in which the grade is less than a *C* counting toward the degree requirements.
5. A thesis embodying original research is required and may be counted for not less than three nor more than six semester hours of credit.
6. A final oral examination is required consisting of two parts:
 - a. A public presentation of the thesis research and
 - b. a closed session of inquiry by the student's research and advisory committee.

Business Administration

MBA e-mail: jope@siu.edu

DBA e-mail: barbh@siu.edu

The graduate faculty, consisting of members of the School of Accountancy and the Departments of Finance, Management, and Marketing, offers graduate work leading to the Master of Business Administration degree, the Master of Accountancy degree, and the Doctor of Business Administration degree.

Graduate Faculty in Accountancy

See under the major heading for the program in Accountancy

Graduate Faculty in Finance

Cornett, Marcia M., Professor, Ph.D., Indiana University, 1983; 1990. Corporate finance and financial institutions and markets.

Davids, Lewis E., Professor, *Emeritus*, Ph.D., New York University, 1949; 1978.

Davidson, Wallace N., III, Professor, Ph.D., Ohio State University, 1982; 1989. Corporate finance.

Elsaid, Hussein H., Professor and *Chair*, Ph.D., University of Illinois, 1968; 1967. International finance and financial management.

Mathur, Iqbal, Professor, Ph.D., University of Cincinnati, 1974; 1977. Financial management and international finance.

Musumeci, James, Assistant Professor, Ph.D., University of Texas at Austin, 1987; 1993. Investments and corporate finance.

Rangan, Nanda, Associate Professor, Ph.D., Texas A&M University, 1986; 1986. Financial institutions.

Schwarz, Thomas V., Associate Professor, D.B.A., Florida State University, 1984; 1988. Investments and speculative markets.

Szakmary, Andrew C., Assistant Professor, Ph.D., University of New Orleans, 1989; 1990. Corporate finance, international finance.

Tyler, R. Stanley, Associate Professor, *Emeritus*, J.D., University of Illinois, 1952; 1970. Business law, legal environment of business and real estate.

Vaughn, Donald E., Professor, Ph.D., University of Texas, 1961; 1970. Budgeting and investments.

Waters, Gola E., Professor, J.D., University of Iowa, 1957; Ph.D., Southern Illinois University at Carbondale, 1970; 1965. Business law and labor law.

Graduate Faculty in Management

Bateman, David N., Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1970; 1965.

Bedwell, R. Ralph, Associate Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1969; 1954.

Bhattacharyya, Siddhartha, Assistant Professor, Ph.D., University of Florida, 1993; 1993.

Fohr, John M., Professor, *Emeritus*, Ed.D., Michigan State University, 1959; 1962.

Keon, Thomas L., Professor and *Dean*, *College of Business and Administration*, Ph.D., Michigan State University, 1979; 1995. Strategic management, organizational theory.

Larson, Lars L., Associate Professor, *Emeritus*, Ph.D., University of Illinois, 1971; 1971.

McKinley, William, Associate Professor, Ph.D., Columbia University, 1983; 1990. Organization theory, organizational behavior, strategic management.

Melcher, Arlyn J., Professor, Ph.D., University of Chicago, 1964; 1989. Organization theory, strategic management, research methodology.

Nelson, Reed, Associate Professor, Ph.D., Cornell University, 1983; 1991. Organizational behavior and theory.

Ponce de Leon, Jesus, Assistant Professor, Ph.D., Indiana University, 1989; 1991. Strategic management, international business, technology management.

Rai, Arun, Associate Professor, Ph.D., Kent State University, 1990; 1990. Management information systems, database management, management support systems.

Ramaprasad, Arkalgud, Professor, Ph.D., University of Pittsburgh, 1980; 1980. Strategic management, management information systems.

Scott, John W., Professor, *Emeritus*, Ph.D., University of Chicago, 1930; 1947.

Sekaran, Uma, Professor, *Emeritus*, Ph.D., U.C.L.A., 1977; 1977.

Stubbart, Charles, Associate Professor and *Chair*, Ph.D., University of Pittsburgh, 1983;

1991. Strategic management, international business.

Tadisina, Suresh K., Associate Professor, Ph.D., University of Cincinnati, 1987; 1986. Operations management and management sciences.

Troutt, Marvin D., Professor, Ph.D., University of Illinois at Chicago, 1975; 1976. Mathematical programming, modeling of systems, optimization theory.

Vicars, William M., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1969; 1961.

White, Gregory P., Associate Professor, Ph.D., University of Cincinnati, 1976; 1978. Production management and management sciences.

Wilson, Harold K., Associate Professor, *Emeritus*, D.B.A., University of Colorado, 1972; 1972.

Graduate Faculty in Marketing

Adams, Kendall A., Professor, *Emeritus*, Ph.D., Michigan State University, 1962; 1965.

Andersen, R. Clifton, Professor, D.B.A., Indiana University, 1960; 1967. Marketing management and marketing channels.

Anderson, Carol H., Associate Professor, *Emerita*, Ph.D., Texas A&M University, 1980; 1979.

Balasubramanian, Siva, Associate Professor, Ph.D., State University of New York at Buffalo, 1986; 1992. Advertising and promotional management, consumer behavior, new product diffusion models, and measurement issues in marketing.

Bruner II, Gordon C., Associate Professor, Ph.D., University of North Texas, 1983; 1984. Consumer behavior, promotion management, and scale compilation.

Dommermuth, William P., Professor, *Emeritus*, Ph.D., Northwestern University, 1964; 1968.

Fraedrich, John P., Associate Professor, Ph.D., Texas A&M University, 1988; 1987. Ethics, international marketing, and industrial sales.

Grant, John A., Assistant Professor, Ph.D., Arizona State University, 1993; 1993.

Hindersman, Charles H., Professor, *Emeritus*, D.B.A., Indiana University, 1959; 1960.

King, Maryon F., Assistant Professor, Ph.D., Indiana University, 1989; 1988. Marketing management, consumer behavior, promotion management.

Lambert, Zarrel V., Professor and *Chair*, Ph.D., Pennsylvania State University, 1966; 1995. Research methodology and statistics.

Mathur, Lynette Knowles, Assistant Professor, Ph.D., The Ohio State University, 1990; 1988. International business/marketing, marketing channels, and physical distribution.

Moore, James R., Assistant Professor, *Emeritus*, Ph.D., University of Illinois, 1972; 1969.

Perry, Donald L., Associate Professor, Ph.D., University of Illinois, 1966; 1964. Social marketing, management, and sales management.

Summey, John H., Associate Professor, Ph.D., Arizona State University, 1974; 1978. Marketing management, marketing research, product strategy.

To support the graduate programs, the College of Business and Administration houses a computer laboratory equipped with microcomputers and terminals for mainframe access. The laboratory is staffed with graduate assistants and has up-to-date word processing and spreadsheet software. In addition, the University maintains two additional laboratories which also contain microcomputers, terminals for mainframe access, and up-to-date software.

Master of Business Administration

The basic objectives of the Master of Business and Administration (M.B.A.) degree program are first, the development of professional managers and executives to serve the needs of business, government, and other organizations and second, the preparation of students interested in doctoral study. The program is designed to develop the individual's ability to comprehend internal and external social, legal, political, and economic forces as they affect the decision-making process within the organization.

The curriculum enhances the student's professional and academic growth by:

1. Developing critical thinking skills through in-depth analysis of business problems.
2. Strengthening communication skills through class discussions, written assignments, and oral presentations.
3. Increasing organizational and leadership skills through team projects.
4. Broadening comprehension of the dynamics of the business environment through emphasis on the role of environmental variables affecting organizational performance.
5. Emphasizing the global nature of today's business environment and its impact on decision making.

6. Enhancing decision making skills in complex environments through the use of quantitative techniques, computer simulations, database management, and business games.
7. Bridging the gap between the theoretical and practical aspects of business through case analysis and projects with local businesses.
8. Providing professional development and networking opportunities through business-to-student seminars and speaker programs sponsored by the Graduate Business Association.

The program has been structured with flexibility so as to serve both holders of baccalaureate degrees in business administration and those who hold degrees in other disciplines. The M.B.A. program is accredited by the American Assembly of Collegiate Schools of Business (AACSB).

Concentration in International Business

Students wishing to concentrate in international business may, as part of their elective courses, select from two program options.

Option 1 - Business Focus

BA 580 International Business Operations

ANTH 402 People and Culture

and two of the following:

ACCT 548 Interjurisdictional Tax

BA 522 Global Manufacturing and Operations

BA 553 Multinational Marketing

BA 545d International Strategic Management

Option 2 - Business and Area Studies

BA 580 International Business Operations

ANTH 402 People of Culture

and one of the following:

ACCT 548 Interjurisdictional Tax

BA 535 International Finance

BA 522 Global Manufacturing & Operations

BA 553 Multinational Marketing

BA 545d International Strategic Management

and International Experience: one summer or semester abroad in course work

The first option allows a student to obtain a depth of understanding by taking courses in the functional areas that focus on the international aspects of marketing, finance, etc. The second option is an attempt to approach a degree of competency within the constraints of the international concentration. Students who choose either option one or option two may also participate in the language certificate program. Students choosing option two are encouraged to participate in the certificate program.

Language Certificate Program

Students enrolled in the Master of Business Administration degree program in the College of Business and Administration at Southern Illinois University at Carbondale have the option of participating in a language certificate program. This certificate program will allow students the opportunity to obtain a foreign language certification using standards established by the American Council of Teachers of Foreign Language (ACTFL).

Eligibility. To be eligible for participation in the certificate program, a student must be enrolled in the M.B.A. program and have two years (or equivalent) of college courses in the language in which the student is seeking certification. A student may not seek certification in his or her native language.

Program. Students electing the certificate program will be evaluated by faculty in the Department of Foreign Languages and Literatures using ACTFL standards. Following evaluation, a program of recommended courses will be provided to the student. Upon completion of these courses, the student will be evaluated again and awarded a certificate indicating the level of proficiency attained.

Languages. Certification will be offered in the following languages:

- French
- German
- Spanish

Admission Requirements

Prospective degree candidates are expected to demonstrate a readiness for graduate study and an aptitude for successful performance in graduate level work in business administration. Admission to the program is based on the applicant's undergraduate record, a satisfactory score on the Graduate Management Admission Test, and other evidence pertaining to ability to perform well in graduate work in business administration. Special circumstances and work experience may be considered if presented. More specifically, the applicant must:

1. Meet all admission requirements set forth by the Graduate School. These requirements are outlined elsewhere in the catalog.
2. Complete the Graduate Management Admission Test and have the results of the test mailed directly to graduate programs, College of Business and Administration.

Information regarding this test is available by writing to: Graduate Management Admission Test, Educational Testing Service, PO Box 6103, Princeton, NJ 08541-6103 USA.

To apply, one needs to complete and submit a Graduate School application and an M.B.A. program application. Application materials may be obtained from: Graduate Programs, College of Business and Administration, Southern Illinois University at Carbondale, Carbondale, IL 62901-4625, (618) 453-3030.

A non-refundable application fee of \$20.00 must be submitted with any application to the M.B.A. or D.B.A. program. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable in U.S. funds cleared through a United States bank will be accepted.

Application Deadlines

	<u>Fall</u>	<u>Spring</u>	<u>Summer</u>
Assistant Applicants	March 15	September 15	February 15
Fellowship Applicants	Nov. 15 of previous year (fall awards only)		
Other U.S. Applicants	June 15	November 15	April 15
Other International Applicants	April 15	September 15	February 15

Degree Requirements

A minimum of 32 semester hours of course work is required. Students must earn a 3.0 grade point average (4.0 = A). Candidates who receive permission to write a thesis must complete a minimum of 29 semester hours of course work plus an acceptable thesis, for which 6 semester hours of credit are assigned.

Students who enter the M.B.A. degree program without the necessary foundation courses in the common body of knowledge of business and administration as specified by the American Assembly of Collegiate Schools of Business must complete them in a satisfactory manner. These students may be required to complete up to 37 semester hours of acceptable course work to satisfy this require-

ment. In addition, students must satisfy a computer ability requirement for spreadsheet programs.

For courses previously taken to be evaluated as possible equivalents to M.B.A. foundation courses at SIUC, one needs to have earned a grade of *C* or higher in each and supply the M.B.A. academic adviser with the course syllabus for each course to be evaluated. Where syllabi are not available, a course catalog, or catalogs as appropriate, for the years the courses were completed may be presented. Transcripts may not be substituted for syllabi/catalog descriptions. This supporting documentation needs to be provided to the M.B.A. academic adviser at least 2 weeks in advance of one's first M.B.A. advisement appointment and subsequent registration.

The M.B.A. degree program course work to be taken beyond the foundation courses is determined on an individual basis in conference with the M.B.A. program academic adviser. All core and elective requirements must be met. For up-to-date information regarding the core and elective courses of the M.B.A. program, contact: Graduate Programs, COBA, Southern Illinois University at Carbondale, Carbondale, IL 62901-4625.

Students may choose to take all of their electives in a particular area such as accounting, finance, management, or marketing in fulfilling their electives, or, alternatively, take electives across 2 or more areas. Students may request approval to take one or more substantive electives outside of business which would provide training unavailable through business courses and would facilitate the student meeting career goals.

Transfer Credit

Within limits imposed by the policies of the Graduate School, an incoming student may receive transfer credit for up to 6 semester hours of equivalent course work if the courses were taken at an AACSB accredited graduate school.

A graduate student who has 6 hours or less of course work remaining in their program may petition the master's programs committee for permission to complete up to 6 hours of equivalent course work at another AACSB accredited graduate school. The determination of equivalency is to be made by the director of the Master of Business Administration degree program.

Course work from other than AACSB accredited graduate schools must be approved by the master's programs committee.

Academic Retention

In addition to the retention policies of the Graduate School, a student may earn no more than 7 hours of *C* or lower in the M.B.A. core classes, or he/she will be suspended from the M.B.A. program. A student who has 3 outstanding recorded grades of *Inc* or *Def* remaining on the grade record at the end of any semester or session, for any reason, will be deemed to be not making normal progress and will be placed on probationary status. If the student has 3 outstanding grades of *Inc* or *Def* remaining on record at the end of the next semester or session, the student will be suspended from the program. The definitions of *Inc* and *Def* may be found in the *Graduate Catalog*.

A student who is to receive a grade of *Inc* in a course is to meet with the instructor to work out a time and conditions for completion of the course within policy guidelines. Typically, a Notification of Incomplete Grade Agreement form is completed and the student is provided with a copy.

M.B.A./J.D. Concurrent Degree Program

The College of Business and Administration (COBA) and the School of Law, together, offer the M.B.A./J.D. concurrent degree program. The J.D. degree alone requires completion of 90 semester hours of course work and the M.B.A. degree alone requires completion of 32 semester hours of course work; however, in the

M.B.A./J.D. concurrent degree program the School of Law accepts 9 semester hours of business course work toward meeting the J.D. semester hour requirement and COBA accepts 9 semester hours of law toward meeting the M.B.A. semester hour requirement. The end result is that the concurrent degree program actually entails completion of 81 semester hours of law courses and 23 semester hours of business courses, with an 18 semester hours savings over pursuing both degrees separately outside of the M.B.A./J.D. concurrent degree program.

A student interested in enrolling in the M.B.A./J.D. concurrent degree program must apply both to the graduate program in law (which involves a law school application) and to the graduate program in business (which involves a Graduate School application and an M.B.A. program application) and be accepted by each program. The student may then request permission to pursue the concurrent degree program. This request must be made both to COBA and the School of Law and should be made prior to commencing the second-year law curriculum.

During the first academic year of concurrent work on the two degrees, the student enrolls only in the first-year law curriculum. In any subsequent academic term, the student may enroll for courses either in the School of Law or in the Master of Business Administration program. A student registered for both law and graduate courses in the same term must enroll for a minimum of 10 hours in law, and 12 semester hours in total, in order to meet A.B.A. residence requirements and the academic requirements of the School of Law.

M.A. in Telecommunications/M.B.A. Concurrent Degree Program

The College of Business and Administration (COBA) and the Department of Radio-Television (R-TV) in the College of Mass Communication and Media Arts (MCMA) together offer an M.A. in telecommunications/M.B.A., a concurrent degree program leading to both the Master of Business Administration and the Master of Arts with a major in telecommunications. The M.B.A. degree requires completion of 32 semester hours of course work; the M.A. with a major in telecommunications requires the completion of 30 semester hours of course work. In the concurrent M.A. in telecommunications/M.B.A. degree program, COBA accepts 6 semester hours of R-TV approved course work, and R-TV accepts 6 semester hours of COBA approved course work. The end result is that the concurrent degree program entails completion of 26 semester hours of COBA approved courses and 24 semester hours of Radio-Television approved courses, for a total of 50 hours; this is a savings of 12 semester hours over pursuing both degrees separately outside of the M.A. in telecommunications/M.B.A. concurrent degree program.

Students interested in enrolling in the M.A. in telecommunications/M.B.A. concurrent degree program must apply to both the graduate program in COBA and the graduate program in R-TV and be accepted by both programs. This initiates the process to pursue the concurrent degrees.

Students enrolled only in the M.B.A. in the College of Business and Administration or the M.A. in telecommunications may request admission into the other program and approval to pursue the concurrent degree program. Admission to the concurrent degree program must be done at least one semester before the last semester of registration at SIUC.

M.B.A./M.S. in Agribusiness Economics Concurrent Degree Program

The College of Business and Administration (COBA) and the Department of Agribusiness Economics (ABE) in the College of Agriculture (COA) together offer an M.B.A./M.S., a concurrent degree program leading to both the Master of Business Administration and the Master of Science with a major in agribusiness economics. The M.B.A. degree requires completion of 32 semester hours of

course work; the M.S. with a major in ABE requires the completion of 30 semester hours of course work. In the concurrent M.B.A./M.S. degree program, COBA accepts 6 semester hours of ABE approved course work, and ABE accepts 6 semester hours of COBA approved course work. The end result is that the concurrent degree program entails completion of 26 semester hours of COBA approved courses and 24 semester hours of ABE approved courses, for a total of 50 hours; this is a savings of 12 semester hours over pursuing both degrees separately outside of the M.B.A./M.S. concurrent degree program.

Students interested in enrolling in the M.B.A./M.S. in agribusiness economics concurrent degree program must apply to both the graduate program in COBA and the graduate program in ABE. The student must be accepted by both programs. This initiates the process to pursue the concurrent degrees.

Students enrolled only in the M.B.A. in the College of Business and Administration or the M.S. in agribusiness economics may request admission into the other program and approval to pursue the concurrent degree program. Admission to the concurrent degree program must be done at least one semester before the last semester of registration at SIUC.

Doctor of Business Administration

The Doctor of Business Administration (D.B.A.) degree program is designed to prepare individuals for faculty research and teaching positions in academic institutions and for high-level administrative or staff positions in business, government, and other organizations. Candidates for the D.B.A. degree must demonstrate in-depth knowledge of business and administration and high potential to undertake significant research.

Admission Requirements

To be eligible for admission, students must have completed a master's degree or its equivalent. A grade point average in all graduate level work of 3.5 ($A = 4.0$) is preferred, but not less than 3.33 is permitted for admission.

In certain instances admission to the D.B.A. program directly from the baccalaureate degree is permitted. To be considered for this admission route, students must have demonstrated promise of success in the D.B.A. program through outstanding achievement at the undergraduate level (minimum grade point average of 3.5 on a 4.0 scale) and superior performance in both the verbal and quantitative components of the Graduate Management Admission Test (minimum GMAT score of 600).

Applicants with exceptional research potential or outstanding academic preparation may have the option to enter the D.B.A. program after at least one semester as an M.B.A. student at SIUC.

To apply to the D.B.A. program, each applicant is required to take the Graduate Management Admission Test (of the Educational Testing Service) and have an official report of these scores sent to SIUC. The applicant needs to complete and submit a Graduate School application and a D.B.A. program application. Application materials may be obtained from: Graduate Programs, COBA, Southern Illinois University at Carbondale, Carbondale, IL 62901-4625.

A non-refundable application fee of \$20.00 must be submitted with any application to the D.B.A. program. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable in U.S. funds cleared through a United States banks will be accepted.

Degree Requirements

Students in the program must complete course work in certain foundation areas. A student who has completed successfully the requirements for the M.B.A. degree from an AACSB-accredited graduate business program will have met the

foundation requirements. A student with a M.Acc. from an AACSB-accredited program will be expected to take some courses, to be determined by the student's advisory committee, outside the accounting area. All other students will either complete the following courses or demonstrate proficiency based on prior academic work:

BA 410-3 Financial Accounting

BA 526-3 Managerial Economics

MATH 140-4 Short Course in Calculus

EPSY 506-4 Inferential Statistics

and 5 courses from any 3 of the following 4 areas:

a. BA 430, BA 510, BA 530

b. BA 450, BA 550, BA 598

c. BA 540, BA 598

d. BA 452, BA 520, BA 560

In addition, the student must demonstrate proficiency in computer programming.

The student must complete a prescribed program of doctoral course work beyond the foundation work. A minimum of 60 semester hours is required: 12-18 hours in the major field; 6-12 hours in a support field; 6-12 hours of research tools; and 24 hours of dissertation credit. Additional hours may be required as prescribed by the student's advisory committee.

It is expected that all doctoral course work will be completed at SIUC. In exceptional cases, the advisory committee may consider petitions to accept credit, not to exceed 6 hours, for doctoral course work done at other institutions.

In addition to the retention policy of the Graduate School, for the D.B.A. program the third grade below *B* or the second grade below *C* in any graduate level course not designated as a foundation course will result in automatic dismissal from the D.B.A. program without any right of appeal.

Advisement

For each student an advisory committee is constituted and approved according to procedures described in the D.B.A. policies and procedures document of the COBA. The advisory committee is responsible for developing and approving a program of study for the student which meets all requirements of the Graduate School and the D.B.A. program. The specific program is designed in terms of the individual student's career objectives.

Preliminary Examinations

The preliminary examination is designed to determine the breadth and depth of the student's knowledge within the discipline. A minimum of 2 years of study (48 semester hours) beyond the baccalaureate must be completed before the student is permitted to sit for the preliminary examination, and the student must be in the last semester of all scheduled course work.

The preliminary examination has a written and oral portion. After successful completion of the written segment, the student will sit for the oral portion of the preliminary examination. Students who pass the oral portion will be recommended for candidacy when the residency and research tool requirements have been met. Students who fail the preliminary examination, or any part thereof, may petition to retake the examination or any part thereof.

Specific conditions may be stipulated before the student can sit for the examination a second time. Those who fail the preliminary examination a second time will be dismissed from the program.

Dissertation

Upon admission to candidacy, a dissertation committee is constituted and approved according to procedures described in the D.B.A. policies and procedures

document of the COBA. The student will prepare a written proposal and submit it to the dissertation committee and make an oral presentation of the dissertation proposal. On acceptance of the written and oral presentation of the dissertation proposal by the dissertation committee, the student will proceed with further work on the dissertation topic. The dissertation committee will monitor the student's progress in completing the dissertation. A final oral examination will be administered by the dissertation committee and will cover the subject of the dissertation and other matters related to the discipline. Upon successful completion of the final oral examination, the candidate will be recommended for the D.B.A. degree.

Other Graduate Degrees Offered by COBA

The college also offers the Master of Accountancy (M.Acc.) degree. In addition, jointly with the School of Law the college offers the J.D./M.Acc. concurrent degree program. The reader is referred to the accountancy section of this catalog for details regarding the M.Acc. and J.D./M.Acc. programs.

For More Information

Additional information regarding the M.B.A. degree program or D.B.A. degree program may be obtained by contacting Graduate Programs, COBA, Southern Illinois University at Carbondale, Carbondale, IL 62901-4625. Additional information regarding the M.Acc. degree program may be obtained by contacting the School of Accountancy in the College of Business and Administration.

Courses (BA)

Students desiring to enroll in these courses must be admitted to the Master of Business Administration, Master of Accountancy, or Doctor of Business Administration degree program or have permission of the associate dean for graduate study in business administration or accountancy.

410-3 Financial Accounting Concepts. Basic concepts, principles, and techniques used in the generation of accounting data for financial statement preparation and interpretation. Asset, liability, equity valuations and income determination is stressed. Prerequisite: Enrollment in M.B.A. program or consent of department.

420-3 Production/Operations Management. A survey of the design, operation and control of systems that produce goods and services. Topics include forecasting, production planning, facility location and layout, inventory management, scheduling and quality control. Prerequisite: enrollment in M.B.A. program or consent of department.

426-3 Managerial Economics. Develops conceptual framework for business decision making with emphasis on demand, costs, prices and profits. Prerequisite: enrollment in M.B.A. program or consent of department.

430-3 Business Finance. An introductory course combining both a description of the structure of business financing and an analysis of functional finance from a managerial viewpoint. Prerequisite: enrollment in M.B.A. program or consent of department; 410, Educational Psychology 506 and M.B.A. program "computer ability" foundation requirement met, or equivalent.

440-3 The Management Process. Analysis of management theories and the administrative process. Specific managerial activities are analyzed and discussed. Functional relationships in administered organizations are explored. Prerequisite:

enrollment in M.B.A. program or consent of department.

450-3 Introduction to Marketing Concepts. An overview of the role of marketing within an economic system and of the major marketing activities and decisions within an organization. Emphasis is on developing an understanding of the marketing process. Prerequisite: enrollment in M.B.A. program or consent of department.

451-3 Methods of Quantitative Analysis. (Same as Mathematics 457.)

452-3 Operations Research. A survey of operations research techniques with emphasis on problem formulation, model building, and model solution. Topics include mathematical programming, waiting-line models, simulation and decision theory. Prerequisite: enrollment in the M.B.A. program or consent of department; 451, Educational Psychology 506 or equivalent.

470-3 Legal and Social Environment. An overview of the legal, social, and ethical dimensions which influence business with particular attention to the role of law as a control factor of society in the business world. Prerequisite: enrollment in MBA program or consent of department.

500-3 Research Applications in Business and Organizations. The analysis of actual problems in research: project design, data collection, analysis, interpretation, dissemination and application in business and organizational settings. This includes an understanding of the proper utilization of appropriate research statistics and involves use of the computer for problem solving. Three lecture

and two laboratory hours per week. Prerequisite: enrollment in M.B.A. program or consent of department; M.B.A. program foundation.

502-3 Business in our Capitalistic Society. Study of the external environment in which business in America operates; social, political, legal and ethical dimension, inter-relationships and requirements. Prerequisite: enrollment in M.B.A. program or consent of department; all M.B.A. program foundation.

503-3 Management of Change. The methods and processes of planned change are examined. Special emphasis is placed on the design and implementation of continuous improvement systems and related issues of managing constant change. Change models are viewed in the context of international competitiveness and a dynamic global environment. Prerequisite: enrollment in M.B.A. or D.B.A. program, or consent of department.

510-3 Managerial Accounting and Control Concepts. Basic cost concepts, measures, methods and systems of internal accounting useful for managerial planning, implementation, control and performance evaluation. Includes cost analysis relevant for non-routine decision-making. Prerequisite: enrollment in M.B.A. program or consent of department; 410 and M.B.A. program "computer ability" foundation requirement met, or equivalent.

513-3 Accounting Concepts in Business Organizations. Accounting theory and practice as it applies to business and other organizations. Emphasis is on current problem areas in accounting and on research methods being used to resolve these problems. Prerequisite: enrollment in the D.B.A. program or consent of department.

514-3 Ethics of Business. Philosophical implications of contemporary issues in business ethics. Prerequisite: enrollment in M.Acc. or M.B.A. Program.

519-3 Seminar in Accounting. Discussion of current accounting theories, principles, standards and problems. Prerequisite: enrollment in M.B.A. program or consent of department.

521-3 Business Conditions Analysis. Emphasis is given to macro-economic theory as it affects economic forecasting. Particular emphasis is given to GNP forecasting models, industry forecasts and forecasting for the firm. Prerequisite: enrollment in M.B.A. program or consent of department; 430 or equivalent.

522-3 Operations Strategy for Global Competition. Study of the development of competitive strategy for the operations function, how that strategy relates to organizational strategy and how the operations function can contribute to an organizations' competitive capabilities in the global marketplace. Prerequisite: enrollment in M.B.A. or D.B.A. programs or consent of department; 420 or equivalent.

530-3 Financial Management. A study of financial principles and practices with special emphasis on their relation to managerial planning and control. Prerequisite: enrollment in M.B.A. program or consent of department; 430, 510 and either 526 or Economics 441 and 440 or equivalent.

531-3 Advanced Financial Management. An evaluation of selected financial policies connected with the acquisition and disposition of funds by the firm. An emphasis is placed on quantitative

solutions to these problems. Prerequisite: enrollment in M.B.A. program or consent of department; 430 or equivalent.

532-3 Financial Institutions and Markets. The principal financial institutions and markets will be studied in relation to their contribution to the efficient operation of the individual enterprise and the total company. Prerequisite: enrollment in M.B.A. program or consent of department; 430 or equivalent.

533-3 Investment Concepts. A study of fixed return and variable return securities, investment services, industry and issue analysis, empirical studies of groups and individual stock price movements. Prerequisite: enrollment in M.B.A. program or consent of department; 430 or equivalent.

534-3 Financial Decision Making. Study of the scope and nature of advanced financial decision making and the application of quantitative tools and techniques to decisions relating to working capital, fixed assets, cost of capital, value of the firm and financial structure. Prerequisite: enrollment in the D.B.A. program or consent of department.

535-3 Multinational Financial Management. Discussion of international monetary system, parity conditions, foreign exchange markets and financial markets. Special focus on financial management of the multinational firm, including risk assessment, hedging, capital budgeting and performance evaluation and control. Prerequisite: 530.

536-3 Advanced Financial Analysis. Deals with examination of classical and various modern treatments of investment, valuation, cost of capital and capital structure. Portfolio, state-preference, capital markets, options pricing, mergers and exchange rate theories are explored. Prerequisite: enrollment in M.B.A. or D.B.A. program or consent of department; 430 or equivalent.

539-1 to 15 Seminar in Finance. A series of doctoral seminars on theoretical and empirical issues in finance. Sections (a) through (d) may be taken only once. Section (e) may be repeated as topics vary. (a) Corporate financial theory. (b) Financial institutions and markets. (c) Portfolio theory and speculative markets. (d) International financial theory. (e) Selected topics. Prerequisite: enrollment in D.B.A. program or consent of department.

540-3 Managerial and Organization Behavior. Case analyses of human problems in the business organization. Application of findings of behavioral science research to organization problems. Development of direction and leadership skills. Prerequisite: enrollment in M.B.A. program or consent of department; 440 or equivalent.

541-3 Operations Research II. Continuation of the survey of topics and approach taken in 452. Problem formulation; model building and elementary mastery of state-of-the-arts solution techniques are emphasized. Topics include integer programming, traveling sales representative problems, probabilistic programming, queuing, simulation and inventory theory. Prerequisite: enrollment in M.B.A. program or consent of department; 452 or equivalent.

543-3 Personnel Management. An overview of the field of personnel administration, based on a

review of the relevant literature and on practice in simulations of problems typically encountered in the field. Prerequisite: enrollment in M.B.A. program or consent of department, 440 or equivalent.

544-3 Advanced Production Planning and Inventory Management. An in-depth study of analytical models and techniques for production planning, scheduling and inventory management. Designed to prepare students for relevant portions of American Production and Inventory Control Society (APICS) certification examinations. Prerequisite: enrollment in M.B.A. or D.B.A. program or consent of department, 420 or equivalent.

545-3 to 21 (3,3,3,3,3,3) Seminar in Organization Studies. A series of advanced seminars in organization studies. Sections (a)-(g) can be taken only once. (a) Foundations in Organization Studies. (b) Advances in Organizational Behavior. (c) Advances in Organization Theory. (d) Advances in Strategic Management. (e) Special Topics in Organizational Behavior. (f) Special Topics in Organization Theory. (g) Special Topics in Strategic Management. Prerequisite: enrollment in D.B.A. program or consent of department.

546-3 Leadership and Managerial Behavior. This course will concentrate on leader and manager behavior at middle and upper organizational levels. Emphasis will be placed on leader and manager effectiveness and the factors that impact effectiveness. Prerequisite: enrollment in M.B.A. program or consent of department, 540 or equivalent.

547-3 to 15 (3,3,3,3 to 6) Seminar in Production/Operations Management. Series of advanced seminars in Production/Operations Management. Sections (a) through (c) may be taken only once. (a) Total Quality Management. (b) Service Operations Management. (c) Production/Operations Management and Information Systems. (d) Special Topics in Production/Operations Management. Prerequisite: (a), (b), (c) enrollment in M.B.A. or D.B.A. programs or consent of department; (d) enrollment in D.B.A. program or consent of department.

548-3 to 18 (3,3,3,3,3 to 6) Seminar in Management Information Systems. A series of advanced seminars on Management Information Systems (MIS). Sections (a) through (d) may be taken only once. Section (e) may be repeated as topics vary. (a) Advances in Management Information Systems. (b) Decision Support and Information Systems. (c) Quantitative and Computer Methods for Decision Support and Information Systems. (d) Strategic Management of Information. (e) 3 to 6 Special Topics in Management Information Systems. Prerequisite: (b) enrollment in M.B.A. or D.B.A. programs or consent of department; (a),(c),(d),(e) enrollment in D.B.A. program or consent of department.

550-3 Marketing Management. A managerial approach to the study of marketing. Emphasis is on the nature and scope of the marketing manager's responsibilities and on marketing decision making. Prerequisite: enrollment in M.B.A. program or consent of department, 450 or equivalent.

551-3 Product Strategy and Management. Designed to treat product management and its relationships with business policies and procedures; the development of multiproduct strategies,

means of developing such strategies and the problems and methods of commercialization. Prerequisite: enrollment in M.B.A. program or consent of department, 550 or equivalent.

552-3 Research Methodology for Marketing. The study of theory, method and procedure for quantitative and qualitative analysis of primary and secondary marketing data. Emphasis is placed on application of specific research tools to the process of formulating and testing research hypotheses. Prerequisite: enrollment in D.B.A. program or consent of department.

553-3 Multinational Marketing Management. The basic elements of marketing management are identified in the setting of a global business environment. Emphasis is given to variables in the international markets that effect strategic business planning such as cultural, ethical, political and economic influences. The course focuses on current trends in the marketing practices of organization. Prerequisite: enrollment in the M.B.A. program or consent of department, 550 and Marketing 435 or equivalent.

554-3 Strategic Issues in Marketing and Society. A critical view of the social, political, legal and economic impact of strategic marketing decision making. Emphasis is on the ethical and moral ramifications of marketing activities in a complex social environment. Prerequisite: enrollment in M.B.A. program or consent of department.

555-3 Seminar in Consumer Behavior. Emphasis on the theories and research relating behavioral science to the discipline of marketing. Development of sophisticated comprehension of the consumption process is undertaken. Prerequisite: enrollment in D.B.A. program or consent of department.

556-3 Seminar in Marketing Strategy. Long run market opportunities are identified and evaluated. Methods of implementation and execution affecting the relationship of strategic marketing planning to the allocation decisions of top management are emphasized. The orientation is toward theoretical development to provide a base for continuing research in the field. Prerequisite: enrollment in D.B.A. program or consent of department.

557-3 Seminar in Marketing Theory. The philosophical bases underlying the development of theory in marketing. The process of development of marketing ideations through research is emphasized. Prerequisite: enrollment in the D.B.A. program or consent of department.

558-3 Promotional Strategy and Management. The study of the elements of the promotional mix including advertising, personal selling, sales promotion and publicity and how they apply in the profit and not-for-profit sectors of the market place. Prerequisite: enrollment in the M.B.A. program or consent of department, 550 or equivalent.

559-3 Seminar in Marketing. Study of current issues and problems in marketing and an evaluation of contemporary marketing theory and practice. Prerequisite: enrollment in M.B.A. program or consent of department, 450 or equivalent.

560-3 Management of Information Systems. A survey of information system design, analysis and operations. Topics include systems concepts,

systems analysis and design, database management, software and hardware concepts, decision support systems, expert systems, distributed processing and telecommunications and information systems planning. Applications of information technology will be emphasized. Prerequisite: enrollment in M.B.A. program or consent of department; 452 or equivalent.

561-3 Database Design and Applications. Database planning, design and implementation; application of data modeling techniques-entity-relationship diagrams, hierarchical, network, relational and object-oriented data modeling; physical design and data administration; Distributed and Expert Database Systems. Prerequisite: enrollment in M.B.A./M.A.C.C./D.B.A. programs or consent; 560 or equivalent.

562-3 Information Systems and Design. Principles and concepts; strategic systems planning; tools and techniques for analysis and design; construction and quality management; reusability; methodology evaluation; full life cycle CASE tools.

570-1 to 2 (1,1) Professional Development Dimensions. To aid the professional development of M.B.A. students by providing a variety of experiences to address attitudes, values and ethical standards. Executive guest speakers, roundtable discussion, simulations and role playing will be used. To be taken as (a) one hour and (b) one hour. Additional charges of approximately \$20 may be assessed for field trips. Prerequisite: enrollment in M.B.A. program.

573-3 Planning Systems and Strategic Decisions. A critical review of theory and research on the structure, content and process of strategic decisions. The design and implementation of planning systems also is emphasized. Prerequisite: enrollment in M.B.A. or D.B.A. program or consent of department.

574-3 Advanced Research Methods in Business Administration. A capstone research course in business administration that exposes the student to a full range of research experiences. Emphasis is on integrating learning and creative thinking in the execution of the research process. Prerequisite: enrollment in D.B.A. program.

574B-3 Advanced Research Methods II. This course is a practicum in advanced research methods. It will focus on analysis of data, interpretation of results and synthesis of conclusions based on a clear understanding of the objectives of research, the characteristics of data and techniques for manipulating data. Prerequisite: 574.

580-3 International Dimensions of Business and Management. International business and activities are examined in the international environment. The course will focus on concepts and issues of international business and will analyze the marketing, financial, accounting, managerial, logistical and production functions of international operations. Emphasis is on integrating, learning and creative thinking through lecture and case analysis. Prerequisite: enrollment in M.B.A. program or consent of program; functional M.B.A. coursework should be completed.

591-1 to 15 (3 per semester per 700 number) Independent Study. Directed independent study in selected areas of business administration. May be repeated as topics vary. Prerequisite: en-

rollment in M.B.A. or D.B.A. program or consent of department; consent of instructor.

595-1 to 6 Internship - Work Experience. Current practical experience in a business or other work directly related to course work in a College of Business and Administration program and to the student's educational objectives may be used as a basis for granting credit to the college. Credit is given when specific program credit cannot be granted and is usable for elective credit only. Credit is sought by petition and must be approved by the COBA dean before registration. Graded S/U or DEF only.

598-3 Business Policies. Study of the development and evaluation of business strategies and policies as they relate to the overall performance of the firm within its environment. Knowledge of the functional areas of administration, available business data and analytical tools will be utilized in solving comprehensive business cases and simulation games. Prerequisite: enrollment for past semester in M.B.A. program.

599-3 to 6 Thesis. Prerequisite: enrollment in M.B.A. program or consent of department, consent of instructor.

600-1 to 24 (1 to 16 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Business Administration degree. Prerequisite: advancement to candidacy for the D.B.A. program.

601-1 per semester Continuing Enrollment. For those graduate students in business who have not finished their degree programs and who have one or more INCs or DEFs on their records and/or are in the process of completing their degree requirements. The student must have previously enrolled in a minimum of 36 hours of course work that meets MBA program core and elective requirement or have completed a minimum of 24 hours of BA 600 before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Courses (FIN)

There is no graduate program offered through the Department of Finance. Four-hundred-level courses may be taken for graduate credit unless otherwise indicated in the course description.

433-3 Portfolio Theory and Management. Examination of modern concepts relating to management of security portfolios. Topics include security analysis, Markowitz Portfolio Theory, efficient market hypothesis, portfolio performance measurement, risk and portfolio construction. Prerequisite: passed 331 with a grade of C or better, 361 (361 may be taken concurrently).

462-3 Working Capital Management. Short-term budgeting and forecasting techniques used in business; alternative approaches to working capital management including consideration of certainty, risk and uncertainty; theory and applications of management of cash, marketable securities, accounts receivables, inventory, banking relationships, and short-term sources of funds. Prerequisite: 361 or concurrent enrollment.

463-3 Forecasting and Capital Budgeting. Long-term forecasting techniques used in business; alternative approaches to capital structure decisions, cost of capital measurement; and performance measurement for investment decisions including mergers and leasing; explicit consideration of certainty, risk and uncertainty in investment analysis; theory and applications in private and public sectors. Prerequisite: 361 or concurrent enrollment.

464-3 International Financial Management. Financial behavior of multinational firms. Emphasis on the modification of conventional financial models to incorporate uniquely foreign variables. Prerequisite: 361 or concurrent enrollment.

480-3 Problems in Labor Law. Social, economic, and legal evaluations of recent labor problems, court decisions and legislation. Concern is on long run legislative impact on manpower planning, dispute settlement and utilization of employment resources.

Courses (MGMT)

There is no graduate program offered through the Department of Management. Four-hundred-level courses in this department may be taken for graduate credit unless otherwise indicated in the course description.

420-3 Database Management. Database planning; entity-relationship diagrams; relational, network and hierarchical data models; normalization theory; query languages; distributed databases; applications development.

421-3 Automated Information System Applications Development. Principles of information engineering; information strategy planning; business area analysis and design; construction; quality assurance; use of CASE technology. Prerequisite: Management 420.

431-3 Organizational Design and Structures. The study of modern theories of complex organizations. Particular emphasis is placed on open-systems perspectives of administrative theory and the adaption of the organization to a changing environment. Prerequisite: 341 and junior standing or consent of department.

453-3 Advanced Quantitative Models for Systems Analysis. A continuation of 352. Mathematical model building in organizations and solution techniques commonly used to solve such models. An extension of topics in deterministic and probabilistic modeling introduced in 352. Prerequisite: 352, junior standing or consent of department.

456-3 Building Decision Support and Expert Systems. Investigation of selected systems and computer based methods for aiding management decision-making. Topics include systems analysis applications, simulation and decision models. Prerequisite: 345.

471-3 Seminar in Entrepreneurship. Investigation of selected special or advanced topics in seminar format. Topics may include but are not limited to entrepreneurship, small business analysis or topics related to the ownership and management of a business. Activities will include library and field research, data analysis, report

writing and active participation in seminar presentations and discussions. Designed particularly for the student who has completed the three small business courses numbered 350 and has discussed personal small business or entrepreneurial objectives with the instructor prior to registration. Prerequisite: consent of department.

474-3 Management's Responsibility in Society. Analysis of the cultural, social, political, economic and immediate environment of the organization. Particular emphasis is given to the manner in which the manager adapts to and is influenced by the environment and its conflicting demands. Prerequisite: senior standing or consent of department.

483-3 Advanced Production-Operations Management. In-depth study of analytical planning, scheduling and control theory and techniques in the context of production/operations systems. Case exercises will be utilized to illustrate production management problems and methods. Prerequisite: 318, 352, junior standing or consent of department and must be a business (not pre-business) major.

Courses (MKTG)

There is no graduate program offered through the Department of Marketing. Four-hundred-level courses may be taken for graduate credit unless otherwise indicated in the course description.

401-3 Retail Management. Designed to present the basic principles in decision areas such as location, layout, organization, personnel, merchandise control, sales promotion, advertising, etc. Retail merchandising through managerial perspective. Prerequisite: 304 and junior standing or higher.

435-3 International Marketing. Analysis of international operations. Emphasis on the factors influencing marketing to and within foreign countries and the alternative methods of operations open to international firms. Prerequisite: 304 and junior standing or higher.

438-3 Sales Management. Analysis of the management of the sales effort within the marketing system. Philosophies, concepts and judgment criteria of the sales function in relationship to the total marketing program. Prerequisite: 304, Management 304 and junior standing or higher.

439-3 Business to Business Marketing. Analysis of decision criteria related to the marketing of business to business products. Emphasis on team marketing, team selling, formulation of marketing mix factors and the behavioral relationships in contemporary organizations. Prerequisite: 304 and junior standing or consent of department.

452-3 Physical Distribution Management. Integration of physical distribution activities of the firm into a system. Transportation and location as elements of the system. Inventories and service as constraints upon the system. Planning, operation, organization and management of the system. Prerequisite: 304 and junior standing or higher.

463-3 Advertising Management. Advertising from the viewpoint of business management. Develops an understanding of the role of advertising under various conditions. Problems of integrating

advertising strategy into the firm's total marketing program. Prerequisite: 304 and 363 and junior standing or higher.

493-3 Marketing Policies. A comprehensive and integrative view of marketing policy formulation.

Marketing decisions analyzed and discussed. Prerequisite: 329, 363 and 390 (not more than one to be taken concurrently) and junior standing or higher and must be a business (not prebusiness) major or consent of department.

Center for the Study of Crime, Delinquency, and Corrections

(See Administration of Justice.)

Chemistry and Biochemistry

E-mail: chemistry@chem.siu.edu

COLLEGE OF SCIENCE

Bartholomew, Blaine, Assistant Professor, Ph.D., University of California, Davis, 1988; 1991. Biochemistry, protein-DNA interactions, gene regulation, photoaffinity labeling, eukaryotic transcription, modified nucleotides, protein structure/function.

Bausch, Mark J., Associate Professor, Ph.D., Northwestern University, 1982; 1987. Organic radical anion basicities, radical acidities, stability of organic cations.

Davis, Joe M., Associate Professor, Ph.D., University of Utah, 1985; 1987. Analytical, mass transport, separations, electrochemistry.

Gaston, Rick D., Assistant Professor, Ph.D., Indiana University, 1987; 1989. Synthetic organic chemistry, organometallic chemistry.

Groziak, Michael P., Associate Professor, Ph.D., Northwestern University, 1983; 1989. Organic, bioorganic and medical chemistry, nucleoside/heterocycle synthesis, organic/enzymatic reaction mechanisms, mechanism-based enzyme inactivation.

Gupta, Ramesh, Associate Professor, Ph.D., University of Illinois, 1981; 1984. Biochemistry, molecular biology of archaeobacteria.

Guyon, John C., Professor, Ph.D., Purdue University, 1961; 1974.

Hardwicke, Peter, Professor, Ph.D., M.D., University of London, 1969; 1984. Biochemistry, calcium ion transport across muscle membrane, properties of actin and myosin.

Hinckley, Conrad C., Professor, Ph.D., University of Texas, 1964; 1966. Inorganic, magnetic resonance of transition metal complexes, osmium chemistry, iron chemistry in coal.

Koropchak, John A., Professor and Chair, Ph.D., University of Georgia, 1980; 1984. Analytical, atomic spectroscopy, atmospheric pressure ionization mass spectrometry, metal speciation, plasma chemistry.

Koster, David F., Professor, Ph.D., Texas A&M University, 1965; 1967. Physical, molecular structure, NMR, vibrational spectroscopy, laser-induced reactions.

Lim, Louis W., Assistant Professor, Ph.D., Washington University, 1979; 1991. Biochemistry, X-ray crystallography, protein structure/function,

folding and stability of proteins, structural basis of enzyme inhibition.

Meyers, Cal Y., Professor, Ph.D., University of Illinois, 1951; 1964. Organic, nucleophilic vs electron-transfer reactions and reactivities of anions, halogenation of anions with CX₄, electron-transfer pathways in biological reactions, correlation of structure with in vivo and receptor-site activity of estrogens.

Niederhoffer, Eric C., Assistant Professor, Ph.D., Texas A&M University, 1983; 1990. Metal ion uptake, transport, effects on gene expression, toxic metal bioremediation, metalloprotein structure.

Phillips, John B., Professor, Ph.D., University of Arizona, 1977; 1977. Analytical, chromatography, surface chemistry, laboratory computing, instrumentation.

Scheiner, Steve, Professor, Ph.D., Harvard University, 1976; 1978. Physical, theoretical biophysical chemistry, protein conformation, hydrogen bonding, proton transfers.

Schmidhauser, Thomas J., Assistant Professor, Ph.D., University of California at San Diego, 1986; 1989. Biochemistry, photoregulation of gene expression, molecular biology of filamentous fungi.

Schmit, Joseph G., Associate Professor, Ph.D., Purdue University, 1971; 1976. Biochemistry, developmental biochemistry and genetics, regulation of enzymatic activity, genetic and biochemical control of amino acid metabolism, molecular basis of circadian rhythms.

Schmulbach, C. David, Professor, *Emeritus*, Ph.D., University of Illinois, 1958; 1965.

Shriver, John W., Professor, Ph.D., Case Western Reserve University, 1977; 1981. Biochemistry, nuclear magnetic resonance spectroscopy, mechanism of muscle contraction, energy transduction, myosin structure changes associated with force production in muscle.

Smith, Gerard V., Professor, Ph.D., University of Arkansas, 1959; 1966. Organic, mechanisms of surface reactions, heterogeneous catalytic hydrogenation and exchange, asymmetric catalysis, catalytic oxidation and ozonation, molecular probes for characterization of metal surfaces,

metallic glasses as catalysts, iron sulfides as catalysts, coal conversion catalysis, stereo-chemistry, hydrodesulfurization.

Tyrrell, James, Professor, Ph.D., University of Glasgow, 1963; 1967. Physical, theoretical calculations on atoms and molecules.

Vermeulen, Lori, Assistant Professor, Ph.D., Princeton University, 1994; 1994. Materials chemistry, electron transfer.

Zhu, Xiaoyang, Assistant Professor, Ph.D., University of Texas, 1989; 1993. Experimental physical chemistry, photochemistry and photophysics at gas-solid interfaces, physical chemistry of materials growth.

Programs leading to the Doctor of Philosophy and Master of Science degrees may be undertaken in the general areas of analytical, inorganic, organic, and physical chemistry, and in biochemistry and molecular biology.

The doctoral degree in chemistry is a research degree. To be awarded this degree, the student must demonstrate to the satisfaction of the graduate committee the ability to conduct original and independent research within some area of chemistry and must, in fact, make an original contribution to the science. The master's degree also requires a research project, but with less emphasis on originality and independence.

Admission

Each student must have a baccalaureate degree in one of the sciences, mathematics, or engineering to be considered for admission to an advanced degree program. An undergraduate major in chemistry, with the following courses, is desirable:

- (1) One year of organic chemistry (lecture and laboratory).
- (2) One year of calculus-based physical chemistry (lecture and laboratory).
- (3) One year of analytical chemistry including instrumental analysis.

Prospective students wishing to pursue the degree in the area of biochemistry and molecular biology are expected to have completed courses in organic chemistry, calculus-based physical chemistry, physics, and biology.

Students with deficiencies in any area may be admitted, but such deficiencies may restrict the research areas available to the student and lead to requirements for additional courses during graduate study.

Prospective students are encouraged to contact faculty in areas of the students' research interest.

Applicants are strongly encouraged to submit Graduate Record Examination (GRE) general test scores. Tests from one of the GRE subject test areas (chemistry or biology for students interested in biochemistry and molecular biology) are also encouraged.

Foreign students whose native language is not English will be required to obtain at least 550 on the Test for English as a Foreign Language (TOEFL).

Placement Examinations. One week before the beginning of classes, each admitted student will be given a written examination (ACS standard or equivalent examination) in the division of chemistry in which the student proposes to work. Students who are undecided about a division or who wish to work in a cross-divisional area should take examinations in 2 or more divisions. The results of these examinations are used to place the student in appropriate courses and to advise the student regarding any deficiencies to be corrected.

Formal Course Work Requirement. All graduate students must satisfy core course requirements of the major division. Students in the doctoral program must take for credit at least 6 semester hours of formal 500-level course work outside the major division. At least 3 of these 6 hours must be within the department. Students in the master's program must take for credit at least 3 semester hours of formal 500-level course work outside the major field. Certain 400-level courses within or without the department may be used to meet this requirement. Students may major in cross-divisional areas. In such cases the for-

mal course work requirement will be modified by agreement of the student's committee and the graduate adviser.

Students in the doctoral program must present 3 departmental seminars for credit (CHEM 595). These include one based on a literature review, the second on the topic of an original research proposal, and the final seminar on the student's own research. Only the last 2 seminars are required of students entering the doctoral program with a recognized master's degree. Students in the master's program must present 1 departmental seminar for credit.

All students must take 1 hour of CHEM 597, Professional Training, each semester in residence.

All course work requirements of the department or the major division are minimum requirements which may be increased by the student's graduate committee.

Research Director and Graduate Committee Selection. Each student should select a research director and graduate committee preferably during the first semester, but no later than the end of the second semester in residence. The student must obtain a selection form provided by the graduate adviser and must interview at least 5 faculty members before selecting a research director and graduate committee. The committee shall consist of the research director (chair), at least 1 member of the major division other than the research director, a member outside the major division, and for a Ph.D. degree candidate a member outside the department. The chair of the Department of Chemistry and Biochemistry, if not otherwise appointed, is an ex-officio member of every graduate committee. A division may increase this requirement.

Graduate Committee Functions. The functions of the graduate committee are listed below.

1. To plan and approve the student's program of study.
2. To review the student's progress in courses and suggest and approve changes in the program of study.
3. To evaluate the student's progress in research and to make appropriate recommendations.
4. To determine whether a student may continue toward a degree. If continuation is denied, the committee must notify in writing the department chair of the reasons for this denial.
5. To read and evaluate the student's thesis or dissertation.
6. To conduct required oral examinations.

As soon as possible after being appointed, the committee will meet to plan the student's program. At this time the progress and program form is completed and filed with the graduate adviser. The committee may require preparation of a master's thesis even if directly pursuing a Ph.D. degree has been previously approved by the faculty.

Research Tools. The department requires no specific research tools. A student's graduate committee, taking into account the student's background and the needs of the research area, may require that the student acquire one or more research tools (e.g., foreign language, computer programming, statistics, and so on). Any research tool requirement must be completed before scheduling the preliminary oral examination for doctoral degree students or the final oral examination for master's degree students.

Assistantship Support. Continuation of assistantship support is contingent upon the student making satisfactory progress toward a degree. In addition, continuation of teaching assistantship support depends upon satisfactory performance of

assigned duties. The Graduate School has established time limits for financial support.

First Year Evaluation. The faculty, meeting as a committee of the whole, will review the progress of all graduate students at the end of their first year in residence. For students in the doctoral program the faculty can:

1. recommend continuation in the doctoral program.
2. recommend transfer in the doctoral program.
3. request that the Graduate School terminate the student from the program (giving cause).

For students in the master's program the faculty can:

1. recommend petitioning the Graduate School to allow entry to the doctoral program (accelerated entry option). Such petition can be made any time after one semester in residence.
2. recommend continuation in the master's program with the option to petition the Graduate School to grant a master's degree equivalency. When granted, this allows the student to apply for entrance to the doctoral program without writing and defending a thesis.
3. recommend continuation in the master's program with option to petition to enter the doctoral program after completion of a master's thesis.
4. recommend continuation in a terminal master's program.
5. request that the Graduate School terminate the student from the program (giving cause).

Preliminary Examination for the Ph.D. Degree.

Each student in the doctoral program must pass a preliminary examination before being advanced to candidacy. The written portion of the preliminary examination is given cumulatively with 10 examinations scheduled each calendar year. The student must pass 4 examinations in no more than 10 consecutive trials. Students must begin cumulative examinations no later than the semester following completion of the divisional core course requirements. After the student completes the cumulative examinations, the preparation and defense of an original research proposal will serve as the oral portion of the preliminary examination.

Summary of Ph.D. Degree Requirements. Each student must fulfill the requirements of both the Graduate School and the Department of Chemistry and Biochemistry. These requirements are:

1. to fulfill the divisional course requirements.
2. to complete at least 6 hours of formal course work at the 400/500 level outside the major division, at least 3 of which must be within the department.
3. to complete a course of study as determined by the graduate committee.
4. to maintain at least a 3.00 grade point average.
5. to attend weekly seminars and earn 2 semester hours of CHEM 595 beyond the master's degree requirement by presenting departmental seminars.
6. to earn at least 32 semester hours in research and dissertation (CHEM 598 and 600).
7. to satisfy any research tool requirement established by the student's graduate committee.
8. to pass a series of cumulative examinations which shall serve as the written portion of the preliminary examination.
9. to prepare and defend an original research proposal which shall serve as the oral portion of the preliminary examination.
10. to complete a research project and to prepare a dissertation acceptable to the student's graduate committee and the Graduate School.

11. to schedule and pass a final oral examination (defense of dissertation).

Summary of Master's Degree Requirements. Each student must fulfill the requirements of both the Graduate School and the Department of Chemistry and Biochemistry. These requirements are:

1. to fulfill the divisional course requirements.
2. to complete at least 3 hours of formal course work at the 400/500 level outside the major division.
3. to complete at least 21 hours of formal course work at the 400/500 level with grades of A, B, or C.
4. to earn at least 30 semester hours at the 400/500 level, at least 15 of which are at the 500 level.
5. to maintain at least a 3.00 grade point average.
6. to attend weekly seminars and earn 1 semester hour of CHEM 595 by presenting a departmental seminar.
7. to earn at least 8 semester hours in research and thesis (CHEM 598 and 599).
8. to satisfy any research tool requirement established by the student's graduate committee.
9. to prepare and present a thesis on the research carried out.
10. to schedule and pass a final oral examination.

Courses (CHEM)

All laboratory courses in chemistry and biochemistry require the student to purchase either special notebooks or workbooks, costing within the range of \$1.50 to \$8.50. All students enrolled in a chemistry class that includes a laboratory session will be assessed a breakage charge for all glassware broken. This policy will apply to undergraduate and graduate students.

411-3 Intermediate Inorganic Chemistry. Fundamentals of inorganic chemistry, covering bonding and structure, coordination compounds and the chemistry of some familiar and less familiar elements. Three lectures per week. Prerequisite: 456 or 462 or concurrent enrollment.

431-3 Environmental Chemistry. Chemical principles applied to the environment and environmental problems. Chemical kinetic, thermodynamic and equilibrium concepts as they relate to the atmosphere, water and soil will be discussed to include current problems of pollutants, pollutant evaluation and pollutant remediation. Discussion of methods for the chemical analysis of environmental samples will also be included. Prerequisite: 230 and 340.

434-2 or 4 Instrumental Analytical Chemistry. Theory and practice of instrumental measurements, including emission and absorption spectroscopic, electroanalytical, and chromatographic methods and an introduction to applied electronics. Two lectures and two three-hour laboratories per week for four credits. Enrollment for two credit hours is restricted to graduate students in the Department of Chemistry and Biochemistry who are advised to take instrumental analysis. Prerequisite: one semester of physical chemistry or concurrent enrollment in 461 or 462; 230 or consent of instructor.

439-3 Forensic Chemistry. A one-semester course in forensic methods of analysis offered in conjunction with the Southern Illinois Forensic Science Centre. Topics include identification and quantitation by gas chromatography (GC), GC/

mass spectrometry (GS/MS) of drugs and arson residues, selected ion monitoring by GC/MS, Fourier-transform infrared spectroscopy (FTIR) and GC/FTIR of drugs, scanning electron microscopy, energy dispersive X-Ray analysis of paints and metals, X-Ray diffraction of inorganics and UV spectroscopy. One lecture by SIUC faculty and two labs directed by forensic scientists at the Forensic Science Centre per week. Those enrolled must submit to background checks due to presence of sensitive materials. Enrollment limited to 3-4 students per class; students with high academic standing considered. Prerequisite: 434 and instructor consent.

444-3 Intermediate Organic Chemistry. A transitional course between introductory and graduate level chemistry. The chemistry of carbon compounds based upon a mechanistic approach will be discussed. Three lectures per week. Prerequisite: 340, 342 or one year of organic chemistry.

451-6 (3, 3) Biochemistry. (Same as Microbiology 451) (a) Chemistry and function of amino acids, proteins and enzymes; enzyme kinetics; chemistry, function and metabolism of carbohydrates; citric acid cycle; electron transport and oxidative phosphorylation. (b) Chemistry, function and metabolism of lipids; nitrogen metabolism; nucleic acid and protein biosynthesis; metabolic regulation. Three lectures per week. Must be taken in a,b sequence. Prerequisite: one year of organic chemistry.

455-4 Biochemistry Laboratory. Modern biochemical laboratory techniques for isolation, pu-

rification and characterization of constituents of living cells and for investigations of pathways, kinetics, energetics and regulatory mechanisms related to metabolism and enzymic activity. One lecture and eight hours of laboratory per week. Prerequisite: 451a and 230 or concurrent enrollment.

456-3 Biophysical Chemistry. A one semester course in biophysical chemistry intended for biochemists and molecular biologists. Emphasis will be on solution thermodynamics, kinetics and spectroscopy applied to biological systems. Prerequisite: Mathematics 141 or 150, Chemistry 340 and 342, Chemistry 451a or concurrent enrollment.

461-3 Quantum Mechanics and Spectroscopy. An introduction to quantum mechanics and spectroscopy. Prerequisite: Mathematics 221 or 305 or concurrent enrollment.

462-3 Classical Physical Chemistry. An introduction to chemical, statistical thermodynamics and kinetics. Prerequisite: Mathematics 150; Mathematics 250 recommended.

466-1,1 Physical Chemistry Laboratory. A two semester laboratory sequence. One three hour laboratory per week per semester. (a) Experiments relating to topics covered in 462. Prerequisite: 462 or 456 or concurrent enrollment. (b) Experiments relating to topics covered in 461. Prerequisite: 461 or concurrent enrollment.

468-3 Application of Symmetry to Chemistry. The concepts of symmetry elements, groups and character tables will be taught. Symmetry will be applied to molecules in order to simplify and characterize their wave functions and vibrational frequencies. Prerequisite: 461 or consent of instructor.

489-1 to 3 Special Topics in Chemistry. Prerequisite: consent of instructor and of chair.

511-6 (3,3) Advanced Inorganic Chemistry. (a) Principles of group theory and their application to molecular structure, ligand field theory and its application and magnetic properties of matter. (b) Energetics, kinetics and mechanisms of inorganic systems. Prerequisite: one year of physical chemistry, 411 or satisfactory completion of 500.

519-1 to 9 (1 to 3 per semester) Advanced Topics in Inorganic Chemistry. Metal ions in biological processes and other selected topics to be announced by the department. Maximum credit nine semester hours. Prerequisite: consent of instructor.

531-3 Introduction to Analytical Separations. An introduction to the basic principles underlying separation science, with emphasis on all major chromatographies, gel and capillary electrophoresis, isoelectric focusing, field-flow fractionation, rate and isopycnic sedimentation, filtration, reverse osmosis and related methods. Prerequisite: Mathematics 250.

532-3 Analytical Chemistry Instrumentation. Theories of design and methods of interfacing components of instruments with applications to optimization of systems for determinations of chemicals in trace concentrations. Two lectures and one three-hour laboratory per week. Prerequisite: 434.

535-3 Advanced Analytical Chemistry. Theory and applications of chromatography; statistics;

uses of laboratory computers in chemical instrumentation and data evaluation. Three lectures per week. Lectures will occasionally be used for laboratory operations. Prerequisite: 434.

539-1 to 9 (1 to 3 per semester) Advanced Topics in Analytical Chemistry. Selected topics of interest to practicing analytical chemists such as microanalytical chemistry, functional-group chemical determinations, absorption spectroscopy and electroanalytical chemistry. Maximum credit nine semester hours. Prerequisite: 434.

541-3 Organic Structure and Reactivity. Structure and reactivity of organic compounds: steric, electronic, kinetic and thermodynamic aspects. NMR, ESR, IR, and mass spectrometry in structure characterization. Prerequisite: Master's degree in chemistry, or a grade of B or better in 446, or passing grade on the organic diagnostic examination.

542-3 Mechanistic Organic Chemistry. Reaction mechanisms in organic chemistry. Orbital symmetry, photochemistry and the chemistry of the common transient intermediates. Prerequisite: Master's degree in chemistry, or a grade of B or better in 446, or passing grade on the organic chemistry diagnostic examination.

543-3 Synthetic Organic Chemistry. Organic synthesis: classical and modern methods. Prerequisite: Master's degree in chemistry, or a grade of B or better in 446, or passing grade on the organic chemistry diagnostic examination.

549-1 to 9 (1 to 3 per semester) Advanced Topics in Organic Chemistry. Specialized topics in organic chemistry. The topic to be covered is announced by the department. Maximum credit nine semester hours. Prerequisite: 542.

556-1 to 7 (2,1,2,2,) Advanced Biochemistry. A critical treatment of the topics indicated below. A student may select any one, two, three or all four topics for the indicated credit. (a) Eukaryotic molecular biology. Prerequisite: 451a,b or equivalent; MICRO 460 recommended. (b) Chemical data analysis. Data reduction and analysis with a laboratory microcomputer with examples from chemistry and biochemistry. Prerequisite: 451a,b or equivalent; Microbiology 460 recommended. (c) Chemistry and biochemistry of biological membranes. An advanced level introduction to the techniques used to study biological membranes including: electron microscopy, X-Ray diffraction, spectroscopy, electrophysiological and biochemical. Topics will include the latest information from biophysics to molecular biology. Prerequisite: 556a,b. (d) Biophysical methods. Prerequisite: 556a,b,c.

559-1 to 12 (1 to 3 per semester) Selected Topics in Biochemistry. Topic to be announced by the department. Maximum credit twelve semester hours. Prerequisite: 451b.

560-3 Introduction to Quantum Chemistry. Basic principles and applications of quantum mechanics to chemistry. Topics include operator and vector algebra, classical mechanics, angular momentum, approximate methods, hydrogen-like atoms and molecular electronic structure. Three lectures per week. Prerequisite: one year of undergraduate physical chemistry.

561-3 Molecular Orbital Theory. An introduction to molecular orbital theory. Applications and

limitations of various methods. Three lectures per week. Prerequisite: one year of undergraduate physical chemistry including quantum mechanics.

562-3 Advanced Molecular Spectroscopy. Theory of rotational and vibrational spectroscopy, electronic spectroscopy of molecules. Three lectures per week. Prerequisite: 468 or consent of instructor.

564-3 Statistical Thermodynamics. Principles of statistical mechanics and applications to equilibrium and nonequilibrium systems. Topics include ideal gases, monatomic crystals, lattice statistics, the cluster method, correlation functions, Brownian motion, the Boltzmann equation and the Kubo-Green technique. Three lectures per week. Prerequisite: 465a,b or consent of instructor.

569-1 to 9 (1 to 3 per semester) Advanced Topics in Physical Chemistry. Topic to be announced by the department. Maximum credit nine semester hours. Prerequisite: consent of instructor.

590-1 to 3 Introduction to Research and Teaching. Introduction to currently active research efforts in the department; training in the teaching of chemistry; training in the use of chemical English language, library use and literature searching. Only for graduate students in their first semester in residence. This course does not count towards a graduate degree.

594-2 to 3 Special Readings in Chemistry. Assigned library work in any of the six fields of chemistry with individual instruction by a staff member. (a) Analytical, (b) Biochemistry, (c) Inorganic, (d) Organic, (e) Physical, (f) History of chemistry. Maximum credit three hours.

595-1 Advanced Seminar in Chemistry. Advanced level talks presented by graduate stu-

dents. (a) Analytical, (b) Biochemistry, (c) Inorganic, (d) Organic, and (e) Physical chemistry.

596-1 to 6 (1 to 3 per semester) Master's Degree Research. Graded research for Master's Degree only. Maximum 6 credit hours. Prerequisite: admission to Master's program in Chemistry and Biochemistry. Completion of at least 9 hours of graded graduate course work in the program. Permission of student's graduate advisory committee.

597-1 to 15 Professional Training. Experience in teaching of chemistry, instrument operation and special research projects. One hour required each semester in residence. Graded *S/U* only. Prerequisite: graduate standing.

598-1 to 50 (1 to 12 per semester) Research. Maximum credit 50 hours, except by permission of the student's graduate advisory committee. Graded *S/U* only. Prerequisite: consent of chair.

599-1 to 6 Thesis. Maximum credit six hours. Prerequisite: consent of chair.

600-1 to 30 (1 to 12 per semester) Dissertation — Doctoral. Requirement for Ph.D. degree, 24 hours. Maximum credit 30 hours, except by permission of the student's graduate advisory committee. Prerequisite: 598.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Cinema and Photography

E-mail: gwessel@siu.edu

COLLEGE OF MASS COMMUNICATION AND MEDIA ARTS

Blumenberg, Richard M., Professor, Ph.D., Ohio University, 1969; 1970. Screenwriting and cinema studies.

Boruszkowski, Lilly A., Associate Professor, M.F.A., Northwestern University, 1979; 1982. Cinema production.

Cocking, Loren D., Assistant Professor, M.A., Ohio State University, 1969; 1976. Cinema production.

Covell, Michael D., Assistant Professor, M.F.A., Ohio University, 1975; 1975. Cinema production.

Duhig, Susan, Assistant Professor, Ph.D., Cornell University, 1994; 1994. Cinema studies.

Gilmore, David A., Associate Professor, M.F.A., Ohio University, 1969; 1969. Photography.

Kolb, Gary P., Associate Professor and *Chair*, M.F.A., Ohio University, 1977; 1979. Photography.

Logan, Fern, Assistant Professor, M.F.A., School of the Art Institute of Chicago, 1993; 1995. Photography.

Mercer, John, Professor, *Emeritus*, Ph.D., University of Nebraska, 1952; 1958.

Overturf, Daniel, Assistant Professor, M.F.A., Southern Illinois University at Carbondale, 1983; 1991. Photography.

Paine, Frank, Associate Professor, *Emeritus*, B.S., Iowa State University, 1950; 1960.

Roddy, Jan Peterson, Associate Professor, M.F.A., University of Illinois, 1987; 1988. Photography.

Swedlund, Charles A., Professor, M.S., Illinois Institute of Technology, 1961; 1971. Photography.

The Master of Fine Arts degree in cinema and photography is intended to provide substantial advanced training for a small number of highly talented indi-

viduals. Emphasis in the program is upon the artistic development of the individual student and the student's creative utilization of cinema or photography.

Students may elect to concentrate in cinema or photography. While concentration is a vital component of the program, our philosophy is that graduate study should increase the options available to the student upon graduation; therefore, cross-disciplinary study is encouraged. Strong supporting course work is available in the areas of theory, history, and scriptwriting; through the School of Art and Design, course work in the other fine arts is also available. A distinguished faculty of 12, excellent facilities, and a large variety of curricular offerings allows the students to individually tailor programs to meet their post-graduation goals.

Acceptance into the program and subsequent continuation in it are at the discretion of the Graduate School and the Department of Cinema and Photography. Minimal admission requirements are those of the Graduate School. Students should contact the director of graduate studies, Cinema and Photography, regarding admission procedures to the program.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Prior to admission to the program, students must satisfy the departmental faculty that they are artistically qualified by presenting evidence of exceptional talent in 1 of the 2 concentrations offered in the degree program. This evidence will ordinarily consist of a portfolio of photographs or 1 or more films. In addition, applicants must arrange for 3 letters of recommendation to be forwarded in support of their application. It is assumed that most of the students applying for admission to the M.F.A. program will be graduates of institutions other than SIUC. All such students would ordinarily provide evidence of having completed training of a thoroughness and quality equivalent to that offered in the undergraduate program of the Department of Cinema and Photography. Students with an M.A. or M.S. degree will also be considered for admission. It is recommended that students wishing to emphasize in still photography have a course work background equivalent to C&P 310, 311, 320, and 322. It is recommended that students wishing to emphasize in cinema have a course work background equivalent to C&P 355, 356, 360, and 368.

In addition to the above admission requirements, an interview with the department's graduate committee is highly recommended, particularly for students with minimal course work in the field.

A graduate student entering the M.F.A. program is normally expected to spend the equivalent of 2 academic years fulfilling required work. If the student lacks adequate course work preparation, or if the student serves as a graduate assistant, a longer period may be required. Students' creative work and artistic abilities are reviewed at the end of their first year in the program. If the faculty should conclude that a student has not made sufficient progress, such a person would be dropped from the program. In the second year of residence, each student would be engaged in a great deal of independent artistic work culminating in the M.F.A. creative project, involving the completion of one or more photographic exhibits or the completion of one or more motion pictures. The exact nature of the project would be determined in consultation between students and their committees. All creative projects would have to be exhibited publicly before the department would consider this requirement satisfied.

After the first semester the department chair appoints, in consultation with the student, and the director of graduate studies a major adviser and a committee of two additional graduate faculty members. This committee develops a specific plan of study with the student, considering not only the requirements of the Graduate School and of the degree program, but also the goals of the student. The major adviser supervises the creative project. The University reserves the

right to retain a portfolio of each student's work. An oral examination by the faculty advisory committee would focus on an evaluation of the project. A formal report describing the project must be filed with the Graduate School.

Degree requirements are 60 semester hours, including 30 hours at the 500 level.

Course Requirements

Photography

- 12 hours from C&P 401, 402, 404, 405, 418, 420, 421, 422, 423, 424;
- 6 hours from C&P 471a/b;
- 9 hours from C&P 597;
- 6 hours from C&P 541a/b;
- 6 hours from C&P 575;
- 4 hours from C&P 595a;
- 14 hours from general electives;
- 6 hours from C&P 598.

Cinema

- 12 hours from C&P 452, 454, 455, 456, 470b;
- 6 hours from C&P 472a/b;
- 9 hours from C&P 597;
- 6 hours from C&P 542a/b;
- 6 hours from C&P 468 and 574;
- 4 hours from C&P 595b;
- 14 hours from general electives;
- 6 hours from C&P 598.

Completion of an M.F.A. creative project (registration for at least 6 hours in C&P 598 required).

An oral final examination over the M.F.A. creative thesis.

Courses (CP)

Graduate work in the Department of Cinema and Photography is offered toward the Master of Fine Arts degree. Four hundred-level courses in this department may be taken for graduate credit unless otherwise indicated in the course description.

Students provide photographic materials for all cinema and photography production courses, students supply their own film, photographic paper, certain specialized chemicals, a fully adjustable 35mm or 120 roll film camera and \$15 additional cost for laboratory materials for each production course. In motion picture production courses, students provide their own film, processing, recording materials and editing supplies. In courses which involve analysis and screening of a number of films, a cost of \$10 per course for screenings will be required.

401-3 Large Format Photography. Introduction to the aesthetics and techniques of large format (sheet film cameras) photography with emphasis on personal expression and commercial/professional applications. Students purchase texts and provide photographic materials and chemicals. \$15 for additional laboratory materials. Prerequisite: 320 and consent of department.

402-3 Sensitometry. An advanced course dealing with the technical and visual applications of the black and white process. Explores the zone system, density parameter system and practical chemistry. Also deals with the visual application of these systems. Laboratory fee: \$15. Prerequisite: 320 and consent of department.

404-3 Introduction to the Studio. Problems and possibilities in the aesthetics and techniques of studio photography: lighting, visual perception,

environment, history, theory. Students purchase texts and provide photographic materials. \$15 laboratory fee. Prerequisite: 320 and consent of department.

405-3 Applied Photography I. Theory and practice of contemporary commercial/industrial photography. Students provide materials and may purchase texts. Laboratory fee: \$15. Prerequisite: 322 and consent of department.

406-3 Applied Photography II. Practice and ideas of advertising/illustrative and editorial photography. Students purchase materials and may purchase props, texts and equipment. Laboratory fee: \$15. Prerequisite: 405 and consent of department.

407-3 Photography and the Mass Media. Exploration of the use, context, and meaning of photography in the mass media. The photograph as a

communications tool will be evaluated along with the role and responsibility of the photojournalist. Students will apply theoretical concepts through group and individual assignments. Students purchase texts and provide photographic materials. Laboratory fee: \$15. Prerequisite: 320 and consent of department.

408-3 Documentary Photography: Method, Format and Distribution. Exploration of the techniques, history and contemporary context of documentary photography. Audience, publication, and distribution of documentary projects will be addressed. Each student will produce an in-depth documentary photographic project. Students purchase texts and provide photographic materials. \$15 laboratory fee. Prerequisite: 322 and consent of department.

420-3 Experimental Camera Techniques. Experimental approaches to the creation of photographic images in the camera. Students provide materials and may be required to purchase texts. Laboratory fee: \$15. Prerequisite: 322 and consent of department.

421-3 Experimental Darkroom Techniques. Experimental darkroom manipulations of the straight camera image. Students provide materials and may purchase texts. Laboratory fee: \$15. Prerequisite: 322 or consent of department.

422-3 Advanced Color Photography. Advanced study and production of color photographs with emphasis on experimental techniques using Kwik Proof and other forms of photo-mechanical reproduction. Students provide materials and may purchase texts. Laboratory fee: \$15. Prerequisite: 322 and consent of department.

425-3 to 9 (3,3,3) Studio Workshop. An intensive workshop focusing on current trends in photography. Topics have included landscape photography, architectural photography, environmental portraiture and imagemaking, among others. Students provide photographic materials and may purchase texts. Laboratory fee: \$15. Prerequisite: 322 and consent of department.

426-3 Non-Silver Photography. Intensive introduction to hand-applied emulsions of cyanotype, vandyke brownprinting, gum printing, etc. Students purchase materials and may purchase texts. Laboratory fee: \$15. Prerequisite: 322 and consent of department.

449-3 Survey of Film History. Intensive study of major historical periods of the cinema, including technological developments, national cinema movements, sociological and aesthetic determinations, and concerns of film historiography. Prior completion of 349 and 360 is strongly recommended for cinema and photography majors. Screening fee: \$10.

452-3 Film Planning and Scripting. The screenplay as a basis for production. Practice in preparing film plans, treatments, storyboards and scripts. Examination of the film industry. Prerequisite: 355, junior standing or consent of department.

454-3 Animated Film Production. Practical course for visual expression exploring various animation techniques: developmental, filmographic, rear lit, cut out, line, cel, etc. Students purchase texts, art supplies, film materials and processing. Equipment usage fee: \$10. Prerequisite: 355 and/or consent of department.

455-3 Film Production III. Advanced production by individuals or crews of 16mm sound films from pre-production through shooting. Intensive study of budgeting, production planning, scripting, casting, location and studio shooting techniques, equipment rental, lighting and double system sound filming. Students provide film stock, processing and sound materials. Equipment usage fee: \$50. Prerequisite: 356 and consent of department.

456-3 Film-Production IV. Continuation of 455 through post production to a first answer print. Intensive study of editing, sound mixing, laboratory procedures and distribution. Students provide editing and sound materials and are responsible for laboratory costs. Equipment usage fee: \$50. Prerequisite: 455 and consent of department.

462-3 History of the Documentary Film. Study of the development of the non-fiction film with emphasis on the documentary. Screening fee: \$10. Students purchase texts.

463-3 History of the Experimental Film. Study of experimentation in cinema from the turn of the century to contemporary avant-garde films. Student purchase texts. Screening fee: \$10.

466-3 to 6 (3,3) Film Styles and Genres. Intensive study of specific body of films grouped by similarities in style, genre, period and cultural origin. Emphasis of historical, theoretical and critical issues. Topics vary each semester. Sample topics: the Western; the French new wave; Third World cinema; Surrealism in film. May be taken two times if topic differs. Screening fee: \$10.

467-3 to 6 (3,3) Film Authors. Intensive study of the work of one or more film authors (directors, screenwriters, etc.) Emphasis is on historical, theoretical and critical issues. Topics vary each semester. Sample topics: the films of Alfred Hitchcock, the films of Jean Renoir. May be taken two times if topic differs. Screening fee: \$10.

470-3 to 9 (3,3,3) Advanced Topics. An advanced course concentrating on special topics in cinema and photography. (a) Advanced studies in cinema history/theory. Topics offered have been the information film, feminist and ideological criticism of film. Screening fee: \$10. (b) Advanced topics in film production. Topics offered include motion picture sound workshop, narrative film workshop. Equipment fee: \$50. (c) Advanced studies in photography. Topics offered have included publication and presentation, the figure, multi-image, fantasy photography among others. Laboratory fee: \$15. (d) Advanced studies in interdisciplinary topics. Not more than six semester hours may be counted for graduate credit. Prerequisite: consent of department.

471-3 to 6 (3,3) Problems in Creative Production: Photography. Conceptual exercises involving different aspects of photographic production. Emphasis is placed upon individual creative response to assignments. Topics vary; may be repeated for a total of six credits. Students provide photographic materials and chemicals and may purchase texts. Prerequisite: 322 and consent of department.

472-3 to 6 (3,3) Problems in Creative Production: Cinema. An intensive examination, through readings, screenings, and filmmaking, of a cinematic genre, style, movement, or technical challenge. Theory is combined with practice, re-

sulting in a group film production. Previous problems studied have been the pseudo-documentary, 35mm filmmaking, and film as performance. Topics may vary; may be repeated for a total of six credits. Equipment usage fee: \$50. Prerequisite: consent of department.

541A-3 Seminar: History of Photography, 1839 to World War II. Advanced study of the history of photography with emphasis on the development of technique and content. Students purchase texts.

541B-3 Seminar: Contemporary History of Photography. Advanced study of the history of photography with emphasis on the development of technique and content. Students purchase texts.

542A-3 Seminar in Film History: American. Analysis of the films and ideas associated with a particular director or a significant movement in motion picture history. Screening fee. Students purchase texts. Course content varies each semester; may be repeated for a total of six credits.

542B-3 Seminar in Film History: International. Analysis of the films and ideas associated with a particular director or a significant movement in motion picture history. Screening fee. Students purchase texts. Course content varies each semester; may be repeated for a total of six credits.

574-3 Contemporary Theory and Analysis of Cinema. An intensive examination of the dominant recent theoretical approaches to the cinema. The application of cinema of semiology and structuralism, with very recent branches into psychoanalysis and ideology, will be concentrated upon. Films related to the issues under study are assigned for viewing. Students purchase texts.

575-6 (3,3) Contemporary Theory and Analysis of Photography. Selected readings in the aesthetics and philosophy of photography. Students purchase texts. Weekly reading assignments, discussions, midterm exam and final paper. Topics vary; may be repeated for a total of six credits. Prerequisite: consent of instructor.

591-1 to 6 Individual Study in Cinema and Photography. Supervised research or independent creative work, the area of study to be deter-

mined by the student in consultation with cinema and photography faculty. Prerequisite: consent of department.

595-1 to 15 Graduate Seminar. A seminar for graduate degree candidates focusing on the artistic development of the participants. Prerequisite: admission to the M.F.A. Program in Cinema and Photography.

597A-1 to 16 M.F.A. Projects - Cinema. Supervised independent creative work, the amount and exact nature of which is to be determined in consultation with the Cinema and Photography faculty. Equipment usage fee: \$50. Prerequisite: admission to the M.F.A. program and consent of department.

597B-1 to 16 M.F.A. Projects - Photography. Supervised independent creative work, the amount and exact nature of which is to be determined in consultation with the Cinema and Photography faculty. Laboratory fee \$15. Prerequisite: admission to the M.F.A. program and consent of department.

598A-1 to 6 M.F.A. Final Creative Project - Cinema. Supervised independent creative work leading to the completion of the M.F.A. creative project requirement. Registration for six hours of 598 is required of each M.F.A. candidate. Equipment usage fee: \$50. Prerequisite: admission to the M.F.A. program and consent of the department.

598B-1 to 6 M.F.A. Final Creative Project - Photography. Supervised independent creative work leading to the completion of M.F.A. creative project requirements. Registration for six hours of 598 is required of each M.F.A. candidate. Laboratory fee \$15. Prerequisite: admission to the M.F.A. program and consent of the department.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Civil Engineering

E-mail: lindab@ce.siu.edu

COLLEGE OF ENGINEERING

Bravo, Rolando, Assistant Professor, Ph.D., University of Houston, 1990; 1991. Surface and subsurface hydrology, hydraulics and fluid mechanics.

Chevalier, Lizette R., Assistant Professor, Ph.D., Michigan State University, 1994; 1995. Environmental restoration of groundwater aquifers, experimental investigation of immiscible flow, and numerical modeling of subsurface transport.

Cook, Echol E., Professor, *Emeritus*, Ph.D., Oklahoma State University, 1970; 1971. Biological waste treatment, fixed bed reactors, solid waste disposal.

Craddock, James N., Associate Professor, Ph.D., University of Illinois, 1979; 1980. Solid mechanics, stress analysis; computational mechanics, composite materials.

Davis, Philip K., Professor, *Emeritus*. Ph.D., University of Michigan, 1963; 1964.

DeVantier, Bruce A., Associate Professor, Ph.D., University of California-Davis, 1983; 1983. Water quality modeling, sediment transport, turbulence modeling, finite element methods.

Evers, James L., Associate Professor, Ph.D., University of Alabama, 1969; 1969. Compressible fluid flows, dynamics, pneumatic transport, hydraulic transients.

Ghafoori, Nader, Associate Professor, Ph.D., University of Miami, 1986; 1989. Recycling and utilization of industrial wastes for construction applications, wastes in concrete, durability, strength and behavior of concrete systems.

Hamed, Jihad T., Assistant Professor, Ph.D., Louisiana State University, 1990; 1991. Geotechnical engineering, design, soil behavior, soil remediation.

Kassimali, Aslam, Professor, Ph.D., University of Missouri, 1976; 1980. Structural engineering, nonlinear structural analysis, structural dynamics and stability.

Molls, Thomas R., Assistant Professor, Ph.D., Washington State University, 1992; 1993. Hydraulic engineering, computational fluid mechanics.

Nowacki, C. Raymond, Associate Professor, *Emeritus*, Ph.D., University of Illinois, 1965; 1963.

Puri, Vijay K., Associate Professor, Ph.D., University of Missouri-Rolla, 1984; 1986. Geotechni-

cal engineering, soil dynamics, machine foundations, liquefaction of soils.

Ray, Bill T., Associate Professor, Ph.D., University of Missouri-Rolla, 1984; 1985. Chemical and biological treatment, fixed-film reactors, residuals management, toxic waste treatment.

Rubayi, Najim, Professor, *Emeritus*, Ph.D., University of Wisconsin, 1966; 1966.

Sami, Sedat, Professor and *Chair*, Ph.D., University of Iowa, 1966; 1966. Fluid mechanics, hydraulics and hydrology.

Yen, Max Shing-Chung, Professor, Ph.D., Virginia Polytechnic Institute, 1984; 1984. Composite materials, experimental mechanics, solid mechanics, and structural dynamics.

Ziegler, Timothy W., Associate Professor, M.S., University of Illinois-Urbana-Champaign, 1969; 1982. Geotechnical and highway engineering. Development and application of interactive video technology in engineering curriculum.

Master of Science Degree in Civil Engineering

Graduate work leading to the Master of Science degree in civil engineering is offered by the College of Engineering. The program is designed to provide advanced study in the areas of environmental engineering, geotechnical engineering, hydraulic engineering and water resources, structural engineering, fluid mechanics, solid mechanics and engineering materials.

Admission

Students seeking admission to the graduate program in civil engineering must meet the admission standards set by the Graduate School and have a bachelor's degree in engineering or its equivalent. A student whose undergraduate training is deficient may be required to take coursework without graduate credit.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Requirements

A graduate student in civil engineering is required to develop a program of study with a graduate adviser and establish a graduate committee of at least three members at the earliest possible date. Each student majoring in civil engineering may, with the approval of the graduate committee, also take courses in other branches of engineering or in areas of science and business, such as physics, geology, chemistry, mathematics, life science, administrative sciences, or computer science.

For a student who wishes to complete the requirements of the master's degree with a thesis, a minimum of thirty semester hours of acceptable graduate credit is required. Of this total, eighteen semester hours must be earned in the civil engineering department. Each candidate is also required to pass a comprehensive examination covering all of the student's graduate work including thesis.

If a student prefers the non-thesis option, a minimum of thirty-six semester hours of acceptable graduate credit is required. The student is expected to take at least twenty-one semester hours within the civil engineering department including no more than three semester hours of the appropriate 592 course to be devoted to the preparation of a research paper. In addition, each candidate is required to pass a written comprehensive examination.

Each student will select a minimum of three engineering graduate faculty members to serve as a graduate committee, subject to the approval of the chair of the civil engineering department. The committee will:

1. approve the student's program of study;
2. approve the student's research paper topic;
3. approve the completed research paper; and
4. administer and approve the written comprehensive examination.

Teaching or research assistantships and fellowships are available for qualified applicants. Additional information about the program, courses, assistantships, and fellowships may be obtained from the College of Engineering or the Department of Civil Engineering.

Courses (CE)

Graduate work in the Department of Civil Engineering is offered toward a Master of Science degree in civil engineering. Safety glasses are required for some of the courses in this department. Four-hundred-level courses in this department may be taken for graduate credit unless otherwise indicated in the course description.

410-3 Solid and Hazardous Waste Engineer. Engineering aspects of solid and hazardous waste prevention, treatment, recycling and disposal. Design of recycling programs, solid and hazardous waste treatment and disposal facilities. State and federal regulations. Problems, sources and effects of solid and hazardous waste. Design projects required. Prerequisite: 310.

411-3 Physical and Chemical Treatment in Environmental Engineering. Physical and chemical treatment as applied to water and wastewater. Topics include coagulation, flocculation, sedimentation, adsorption, ion exchange, reverse osmosis and oxidation in dilute aqueous systems. Design of systems. Laboratory. Prerequisite: 310.

415-3 Wastewater Treatment. A study of the design equations used in physical, chemical and biological treatment processes and comparison to design by state standards. Basics of bacteria and their metabolic processes in the degradation of organic wastes. Treatment and disposal of sludges produced in wastewater treatment. Advanced wastewater treatment processes and reuses of wastewater. Prerequisite: 310, Engineering 313 and 351.

417-1 Water Quality Laboratory. Measurements of water quality parameters performed. Use of modern instrumental techniques demonstrated. Safety glasses are required. Laboratory supply fee: \$15. Prerequisite: 310.

419-3 Water Supply and Treatment. Water quality requirements, water sources, water treatment to include coagulation and flocculation, mixing and sedimentation basins, filtration, disinfection processes and water softening. Consideration of toxic elements in water (sources, problems, and treatments). Prerequisite: 310 and Engineering 313.

421-3 Foundation Design. Application of soil mechanics to the design of the foundations of structures; bearing capacity and settlement analysis; design of shallow footings; stability of earth slopes; design of retaining walls, design of pile foundations, coffer dams. Prerequisite: 320.

422-3 Environmental Geotechniology. Geotechnical aspects of land disposal of solid

waste and remediation, solute transport in saturated media, diffusion in soil, hydraulic conductivity and its measurement in laboratory and field, soil-water interactions, compact, construction quality control of liners, flexible membrane liners used in disposal facilities, slope stability/settlement considerations, cap design using the HELP model. Prerequisite: 320.

431-3 Pavement Design. Design of highway and airport systems: subgrades, subbases, and bases; soil stabilization; stresses in pavements; design of flexible and rigid pavements; cost analysis and pavement selection; and pavement evaluation and rehabilitation. Prerequisite: 320 and 330.

440-3 Statically Indeterminate Structures. Analysis of trusses, beams, and frames. Approximate methods. Method of consistent deformations. Three-moment theorem. Slope deflection. Moment distribution. Column analogy. Plastic analysis. Matrix methods. Prerequisite: 340.

441-3 Matrix Methods of Structural Analysis. Flexibility method and stiffness method applied to framed structures. Introduction to finite elements. Prerequisite: 340 and Engineering 222.

442-3 Structural Steel Design. An introduction to structural steel design with emphasis on buildings. Composite design. Plate girders. Rigid frames. Design project and report required. Prerequisite: 340.

444-3 Reinforced Concrete Design. Behavior and strength design of reinforced concrete beams, slabs, compression members and footings. Prerequisite: 340.

445-3 Reinforced Masonry Design. Materials. Loads. Walls. Columns and pilasters. Beams. Lateral-load resisting elements. Connections and joints. High-rise structures. Environmental features. Quality control. Design project and report required. Prerequisite: 444.

446-3 Prestressed Concrete Design. Fundamental concepts of analysis and design. Materials. Flexure, shear, and torsions. Deflections. Prestress losses. Composite beams. Indeterminate structures. Slabs. Bridges. Prerequisite: 444.

451-3 Introduction to Finite Elements in Engineering Applications. (Same as Engineering Mechanics 451.) Introduction to finite element

techniques and computer methods in finite element applications. Theory and structure of algorithms for one-dimensional and multi-dimensional problems. Introduction to boundary element methods. Applications in solid mechanics, structural analysis, groundwater flow and heat transfer. Prerequisite: Engineering 351 or equivalent.

471-3 Modeling Ground Water Flow and Pollution. Mathematical and numerical models for the analysis of groundwater flow and the transport of pollution by moving groundwater. Finite difference and finite element methods. Transport by advection and dispersion. Application to the design of production wells and remediation of polluted areas. Prerequisite: 474 or consent of instructor.

472-3 Intermediate Fluid Mechanics. A detailed derivation of the Navier-Stokes equations is presented. A working knowledge of these equations is obtained by analyzing several potential flows and some simple viscous flows. Next, the Reynolds equations are derived followed by an introduction to turbulence. Contaminant transport is covered by introducing the concepts of diffusion and dispersion. Finally, the foundations of computational fluid dynamics are presented culminating in the numerical solution of several simple viscous flows. Prerequisite: Engineering 313 and Mathematics 305.

473-3 Hydrologic Analysis and Design. Hydrological Cycle, Stream-flow analysis, Hydrographs generations, Frequency analysis, Flood routing, Watershed analysis, urban hydrology, Flood plain analysis. Application of hydrology to the design of small dams, spillways, drainage systems. Prerequisite: Engineering 222, 313.

474-3 Hydraulic Engineering Design. Hydrostatics, flow in pipes, open channels and porous media metering devices. Includes two to three week projects involving identification, modeling, analysis and design of hydraulic engineering systems. Prerequisite: Engineering 313, 351.

500-1 to 4 Seminar. Collective and/or individual study of selected issues and problems relating to various areas of civil engineering. Prerequisite: graduate standing.

510-3 Hazardous Waste Engineering. Analysis of hazardous waste generation, storage, shipping, treatment, and disposal. Source reduction methods. Government regulations. Remedial action. Prerequisite: 427 and Engineering 300.

512-3 Aqueous System Analysis. Applied environmental chemistry as it relates to the natural environment and engineered treatment systems. Topics include thermodynamics and kinetics, acid-base equilibria, computer modeling of aqueous systems, the carbonate system, precipitation and dissolution, coordination chemistry and oxidation-reduction reactions. Prerequisite: 310, 415, 417.

516-3 Water Resources Management. Water quality factors and control methods. Technical, economic, social and legal aspects concerned with implementation of various engineered systems for water quality management. Case studies. Prerequisite: 415.

517-3 Industrial Waste Treatment. Theories and methods of treating industrial wastes. Case

studies of major industrial waste problems and their solutions. Prerequisite: 415.

518-3 Advanced Biological Treatment Processes. The biochemical and microbial aspects of converting substrate to bacterial cell mass or products and its use in various phases of industry (both fermentation and wastewater treatment). Design of activated sludge and trickling filter plants from lab data obtained on explicit wastes from both industry and municipalities. Prerequisite: 415.

520-3 Advanced Geotechnical Engineering I. Advanced theories of soil mechanics including stress distribution, seepage through soils, consolidation and settlement analysis; their applications in foundation engineering. Prerequisite: 320 and Engineering 311.

521-3 Advanced Geotechnical Engineering II. Shear strength of cohesive and cohesionless soils; stability problems including bearing capacity, slope stability and earth pressure distribution. Prerequisite: 520.

522-3 Advanced Foundation Engineering. Case histories of foundation failure, bearing capacity theories, shallow foundations, deep foundations, piles under vertical and horizontal loads, pier foundations, foundations for difficult soil conditions, soil improvement. Prerequisite: 421.

523-3 Soil Dynamics. Problems in dynamic loading of soils, dynamic soil properties, liquefaction, dynamic earth pressure, foundations for earthquake and other dynamic loads. Prerequisite: 320 and 421.

540-3 Structural Dynamics. Analysis of the dynamic response of multidegree-of-freedom framed structures. Structural idealizations. Matrix formulation. Lagrange's equations. Response calculation by modesuperposition and direct integration methods. Analysis for earthquakes. Prerequisite: 340 or consent of instructor.

542-3 Nonlinear Structural Analysis. Analysis of the nonlinear response of framed structures subjected to static and dynamic loads. Structural idealizations. Response calculation by incremental and iterative techniques. Instability phenomena of snap-through and bifurcation. Post-buckling behavior. Approximate formulations. Detection of instability under dynamic loads. Prerequisite: 441 or 551 or consent of instructor.

544-3 Advanced Design of Reinforced Concrete. Deep beams, shear friction. Slab, beam, girder systems. Monolithic joints. Retaining walls. Deflections. Length effects on columns. Two-way floor systems. Yield line theory. Torsion. Seismic design. Prerequisite: 444.

545-3 Advanced Steel Design. Economical use of high strength steel; behavior and design bolted and welded building connections, plate girders and composite steel-concrete beams; brittle fracture and fatigue; and low-rise and industrial-type buildings. Prerequisite: 442.

551-3 Finite Element Analysis. (Same as Mechanical Engineering 565). Finite element analysis as a stress analysis or structural analysis tool. Derivation of element stiffness matrices by various means. Application to trusses, plane stress/strain and 3-D problems. Dynamic and material nonlinearity problems. Prerequisite: Engineering 311 and Mathematics 305.

552-3 Theory of Elasticity. Stress and strain and equations of elasticity; equilibrium equations; compatibility equations; stress functions; applications of elasticity in solving engineering problems in two- and three-dimensions. Prerequisite: Engineering 311 and Mathematics 305.

553-3 Theory of Plasticity. (Same as Mechanical Engineering 513) Criteria for onset of yielding, isotropic and kinematic strain hardening; flow rules for plastic strains; elastic plastic bending and torsion, slip line field theory; plane stress problems; limit analysis. Prerequisite: Engineering 311 and Mathematics 305 or consent of instructor.

554-3 Experimental Mechanics. An introduction of various experimental techniques that are commonly used to determine properties such as deformation, straining, surface contour, etc. The topics to be covered include the principles of strain gage technology, theory of photoelasticity, piezoelectric accelerometer, laser based interferometry, image processing and analysis, and reverse mechanics. The specific areas of practical application of each experimentation will be discussed. Prerequisite: 311.

556-3 Theory of Laminate Composite Structures. Orthotropic and Anisotropic Materials, Laminated Plate Theory, Ritz Method, Galerkin's Method, bending, buckling and vibration of laminated structures. Prerequisite: Engineering 311 and Mathematics 215.

557-3 Advanced Mechanics of Materials. (Same as Mechanical Engineering 566). Advanced topics in mechanics of materials including: elasticity equations; torsion of non-circular sections; generalized bending including curved beams and elastic foundations; shear centers; failure criteria including yielding, fracture and fatigue; axisymmetric problems including both thick and thin walled bodies; contact stresses; and stress concentration. Prerequisite: Engineering 222 and 311.

570-3 Computational Fluid Dynamics. Advanced topics in the computer solution of complex 2-D and 3-D fluid flows. Consideration of various finite difference formulations in different coordinate systems. Upwind differencing, stability analysis, explicit methods, implicit methods,

boundary condition formulation. Introduction to finite element approach. Prerequisite: 472 and Engineering 351 or consent of instructor.

571-3 Mechanics of Viscous Fluids. Theory of laminar viscous flows using the continuum approach. The stress and rate-of-deformation tensors; exact solutions including slow motion and problems of the laminar boundary type. Introduction to hydrodynamic stability. Prerequisite: 472 or consent of instructor.

572-3 Mechanics of Inviscid Fluids. A study of stream functions, the velocity potential, Euler equations, Bernoulli equations, various solutions to Laplace's equation, added masses, Taylor theorem, Blasius and Kármán theorems, two-dimensional irrotational flows, Cauchy-Riemann equations, conformal mapping, vortex flow, thin airfoil theory, and free-streamline flows. Prerequisite: 472 or consent of instructor.

573-3 Open Channel Hydraulics. Open channel flow; energy and momentum; design of channels; gradually varied flow computations; practical problems; spatially varied flow; rapidly varied flow; unsteady flow; flood routing; method of characteristics. Prerequisite: 474 or consent of instructor.

592-1 to 5 Special Investigations in Civil Engineering. Advanced Civil Engineering Topics and/or problems in (a) Structural Engineering, (b) Hydraulic Engineering, (c) Environmental Engineering, (d) Geotechnical Engineering, (e) Fluid Flow Analysis, (f) Computational Mechanics, (g) Composite Materials, and (h) Stress Analysis. Prerequisite: graduate standing and consent of instructor.

599-1 to 6 Thesis.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Communication Disorders and Sciences

See Rehabilitation Institute for program description.

Courses (CDS)

408-3 Communicative Disorders: Craniofacial Anomalies. An introduction to the ontology, teratology, and management of cleft palate and various craniofacial syndromes important to majors and non-majors interested in this aspect of communication and its disorders. Associated problems of personal and social adjustments are also examined. Prerequisite: 214 or consent of instructor.

410-3 Multicultural Aspects of Communication Disorders. Students will explore different cultures and communication within these cultures. Emphasis will be placed on the relationship between cultural differences and communication

disorders. Review of speech and language disorders in multicultural populations, as well as assessment and intervention strategies for use with this diverse group will be provided. Prerequisite: 302, 303 or consent of instructor.

417-3 Stuttering. Reviews the data and theories that relate to the etiology, onset and development of stuttering.

418-3 Parameters of Voice. Physio-acoustic parameters of voice quality variables evidenced in verbal communication. Lectures and demonstrations emphasize basic information necessary to study for the treatment of voice disorders.

419-3 Communication Problems of the Hearing Impaired. Objectives and techniques for the teaching of lip reading, speech conservation, and auditory training. Prerequisite: 302, 303 and 420 or equivalents and consent of instructor.

420-3 Introduction to Audiological Disorders and Evaluation. Bases of professional field of audiology (orientation, anatomy and physiology of the auditory system), major disease processes influencing hearing and their manifestations, measurement of hearing loss. Prerequisite: 203 and 214.

428-3 Communication Disorders and the Classroom Teacher. Etiology and therapy of common speech defects. May be taken by all in-service teachers, seniors and graduate students in education.

431-1 to 6 Speech Physiology. Course focuses on the physiologic parameters of the supraglottal tract, and respiratory and laryngeal systems related to speech production. Discussion and laboratory experiences involve physiological characteristics of normal and disordered speech production, measurement and research procedures, and implications for neuromotor control of speech. Prerequisite: 203 and 214 or consent of instructor.

438-2 Problems of Communication and the Process of Aging. Reviews problems of communication related to the aging process and examines relevant diagnostic and therapeutic techniques. Prerequisite: senior or graduate standing.

450-3 Neuroanatomical Basis of Human Communication. Examination of the central nervous system (brain and spinal cord) as it relates to normal and disordered human communication. Presentation of basic neuroanatomy, common neuropathologies relevant to communication disorders, and strategies in neurogenic problem solving. Prerequisite: 314 or consent of instructor.

460-3 Augmentative and Alternative Communication Systems. An introduction to alternative and augmentative communication systems for non-vocal clients. Discussions include: use of aided and unaided augmentative systems, assessment procedures and training. Prerequisite: 301 or consent of instructor.

485-1 to 9 (1 to 3 per section) Special Topics in Communication Disorders and Sciences. Topical presentations of current information on special interests of the faculty not otherwise covered in the curriculum. Designed to promote better understanding of recent developments related to disorders of verbal communication. Open to advanced undergraduate and graduate students with consent of instructor. The student may take only one section per 700 number.

491-1 to 9 (1 to 3 per semester) Individual Study. Activities involved shall be investigative, creative, or clinical in character. Must be arranged in advance with the instructor, with consent of the chair. Prerequisite: consent of chair.

492-3 Diagnostic Procedures in Communication Disorders. A course devoted to discussion of the role of the speech and hearing clinician as a differential diagnostician. Special emphasis is placed on correlating information obtained from the oral-peripheral examination, articulation and language evaluation, audiometric and case his-

tory information in constructing the initial evaluation report. Prerequisite: consent of instructor.

493-3 Basic Clinical Practice. Current information regarding diagnostic, treatment and documentation procedures in speech-language pathology will be presented through active observation in the clinical environment and classroom instruction. Prerequisite: consent of instructor.

500-3 Research Design in Speech Pathology and Audiology. Evaluation of the strategies and procedural tactics of behavioral research.

503-3 Laboratory Instrumentation in Speech-Language and Hearing Science. Physiological, acoustical, and biomedical recording, measurement and analysis of the speech encoder, decoder, and code for clinical and research applications. Prerequisite: 203 or consent of instructor.

505-3 Phonological Acquisition. An introductory discussion of the important linguistic, physiological and acoustic variables which affect language production at the segmental and supra-segmental level of language; and an historical examination of the growth and development of distinctive feature systems from 1920 to the present. Concentration upon the mathematical, logical, physiological and acoustic assumptions of the various matrices which have been developed. Prerequisite: 302 or equivalent and consent of instructor.

507-3 Language Disorders. Discussion of the application of current theoretical implications and research findings to the syntactically impaired. This course emphasizes diagnostic and therapeutic models applicable to language disorders. Opportunities for research and clinical experience with young children displaying developmental language problems will be provided. Required for master's students. Prerequisite: 303 or consent of instructor.

510-3 Stuttering: Behavior Assessment and Therapy. Explores the assumptions underlying diagnosis and assessment. Procedures specific to the differential assessment of fluency failures are examined, evaluated and related to therapeutic strategies and the tactics of behavior change. Prerequisite: 319 or equivalent and consent of instructor.

512-3 Voice Disorders. An intensive study of the variables of air stream modulation resulting from impaired structures and function of head and neck. Prerequisite: 318 or equivalent and consent of instructor.

517-3 Seminar: Language Disorders Birth to Three. Recent research and trends in language intervention have pointed to the need for very early intervention to optimize the development of handicapped children. In this course we will explore methods of identifying children from birth to 36 months who have language delays or are at-risk for having a language delay or disorder. Current assessment instruments will be reviewed. The course will also review contemporary service delivery models for this population and discuss therapy approaches and materials. Video taped and in-class evaluations will supplement the lectures. Prerequisite: 303 or equivalent or consent of instructor.

521-3 Audiology II: Peripheral and Central Auditory Tests. Application of special behavioral auditory techniques used for site-of-lesion

testing, basic anatomical and neurological correlates of abnormal auditory behavior. Prerequisite: 420 or equivalent and consent of instructor.

525-3 Amplification for the Hearing Impaired. Clinical and laboratory methods of evaluating hearing aid performance; counseling of adult clients, parents and teachers; professional relationship of audiologist to otologists and to hearing aid dealers; use and evaluation of individual and classroom auditory trainers. Prerequisite: 420 and consent of instructor.

526-3 Audiology III: Objective Procedures and Hearing Conservation. Theory and practice in the use of objective auditory procedures such as acoustic immittance measures, auditory brainstem response, and event related potentials; also a consideration of techniques used in hearing conservation such as environmental noise controls and identification audiometry. Prerequisite: 420 and consent of instructor.

528-3 Seminar: Physio- and Psycho-Acoustics of the Ear. Advanced study of the physiological responses of the middle and inner ear to the acoustic stimulus, in relation to major theories of auditory function; advanced study of behavioral responses to the major parameters of the acoustic stimulus; threshold sensitivity, loudness, pitch, localization, beats and masking. Prerequisite: 316 or equivalent and consent of instructor.

530-3 Aural Rehabilitation/Auditory Perceptual Disorders. Advanced study of aural (re) habilitative principles and practices for children and adults as well as diagnoses and remediation of auditory perceptual disorders. Prerequisite: 420, 521, 525 and consent of instructor.

533-3 to 6 (3,3) Seminar: Speech and Auditory Perception. Special problems in hearing and communication science. Students may choose from a wide range of topics: speech acoustic, kinesthetic and vibrotactile perception, voiceprint identification, synthetic and compressed speech, digital speech, electro stimulation of hearing, and neurophysiological basis for perception. One or more topics are pursued in depth. The seminar may be repeated for a total of six hours with different content. Prerequisite: consent of instructor.

536-3 Seminar: Administration of Speech and Hearing Programs. Program settings, organizational procedures, and professional interrelationships in adult speech and hearing therapy. Field trips to rehabilitation centers and related agencies.

540-3 Neurogenic Disorders of Communication I. Focus on aphasia and neurolinguistic science. A clinically oriented presentation of the aphasia, and related CNS language disturbances, will be integrated with an introduction to the broader field of neurolinguistics. Clinical aspects will focus on assessment of rehabilitation approaches in aphasia and related disorders. Other topics include cortical language representation, hemispheric functions (general), and review of basic neurolinguistic literature. Prerequisite: 450 or consent of instructor.

541-2 Neurogenic Disorders of Communication II. Focus on the role of the pyramidal and extrapyramidal motor systems in speech production and speech disorders related to abnormalities in these motor systems. Discussion of the neurological basis and clinical management of the

dysarthrias and verbal apraxia. Prerequisite: 540 or consent of instructor.

544-1 to 6 Seminar: Computer Techniques for Phonological Disorders in Children. A laboratory based examination of the distinctive features used by children in the normal and abnormal acquisition of phonology. Discussions and practical projects are developed to further the students' understanding of current assumptions concerning the acoustical aspects of abnormal phonation and speech sound production. Group projects are developed using computer based speech sound digitizing equipment. Course credit is based upon the time involved and the complexity of the topic. Digital software and laboratory examination topics are varied to meet individual student needs. May be repeated as topics vary to a total of 6 hours.

548-3 Seminar: Stuttering Behavior-Theory and Research. Examines modern learning theory approaches to fluency failure. The learning models dealt with are critically examined in relation to clinical and experimental data. Also reviews the research data on stuttering in relation to design, methodology, and technology. Discussions serve as the background for original investigations. Prerequisite: 319 or equivalent and consent of instructor.

550-1 to 15 Professional Training Seminar. A special seminar that provides doctoral students the opportunity to prepare and present papers on various aspects of speech-language pathology and audiology. Liberal discussion will follow each paper. All doctoral students are required to enroll for one credit each semester until admitted to candidacy. Graded *S/U* only. Only four credit hours are counted toward the Ph.D. degree.

590-1 to 4 (1 to 2, 1 to 2) Readings in Speech-Language Pathology and Audiology. Supervised and directed readings in specific areas of speech pathology and in audiology. Maximum of two hours counted toward master's degree. Prerequisite: consent of chair.

593-1 to 3 Research Problems in Speech-Language Pathology and Audiology. Individual work upon selected problems for research. Prerequisite: consent of chair.

594-1 to 18 (1 to 3 per semester) Advanced Clinical Practice Therapy/SLP. Active, supervised participation in the clinical process with emphasis on individualized assessment, treatment, counseling and documentation procedures. Overview of clinical practice in various settings, federal legislation and standards of ethical practice. Prerequisite: consent of instructor required.

595-1 to 18 (1 to 3 per semester) Advanced Clinical Practice: Diagnostic/SLP. Advanced clinical practicum in speech and language diagnosis. Populations of children and adults will be evaluated. Emphasis will be placed on diagnostic techniques used in evaluation, as well as preparation of evaluation reports. Prerequisite: CDS majors only and consent of instructor.

596-1 Advanced Clinical Practice: Hearing Diagnostics. Advanced clinical practice in hearing diagnostics. Emphasis will be placed on diagnostic techniques used in the preparation of basic and advanced audiological reports. Graded *S/U* only. Prerequisite: consent of instructor.

597-12 Public School Practicum. Public School internship provides the student with clinical experience under the supervision of a school-based certified speech-language pathologist. The student should receive experience with the disorders of fluency, articulation, voice, organics, language and hearing. The student should also gain administrative experience. Prerequisite: 150 to 200 clock hours and consent of instructor.

598-12 Internship Communication Disorders. Internship in a selected medical center, hospital clinic, community agency, or private clinic. The internship provides the student with an intensive, professional, clinical experience un-

der supervision of qualified and certified resident staff members. Prerequisite: consent of instructor.

599-1 to 6 Thesis.

600-1 to 32 (1 to 16 per semester) Dissertation.

601-1 per semester Continuing Enrollment.

For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Computer Science

E-mail: csinfo@cs.siu.edu

COLLEGE OF SCIENCE

Carver, Norman F., III, Assistant Professor, Ph.D., University of Massachusetts, 1990; 1995. Distributed AI, sensor interpretation and (distributed) situation assessment, architectures for knowledge-intensive control of AI systems, reasoning under uncertainty and symbolic representations of uncertainty, abductive inference, real-time AI, parallel AI.

Chu, Jiang-Hsing, Associate Professor, Ph.D., University of Maryland, 1989; 1989. Analysis and design of computer algorithms, data structures, storage and retrieval algorithms, computer graphics and artificial intelligence.

Danhof, K. J., Professor and *Chair*, Ph.D., Purdue University, 1969; 1969. Analysis and complexity of computer algorithms, combinatorics, logic programming.

Gupta, Bidyut, Associate Professor, Ph.D., University of Calcutta, 1986; 1988. Fault-tolerant computing, VLSI design, graph theory, computer networks.

Hou, Wen-Chi, Associate Professor, Ph.D., Case Western Reserve University, 1989; 1989. Statistical, real-time databases, query optimization.

Mark, Abraham M., Professor, *Emeritus*, Ph.D., Cornell University, 1947; 1950.

McGlinn, R. J., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1976; 1981. Computer education, social issues of computing, software engineering, object-oriented programming.

Phillips, Nicholas C.K., Associate Professor, Ph.D., University of Natal, 1967; 1988. Theoretical computer science, language constructs, computational combinatorics.

Tragoudas, Spyros, Assistant Professor, Ph.D., University of Texas at Dallas, 1991; 1991. Computer aided design for VLSI layout, built-in self testing, sequential/parallel algorithms, combinatorial optimization, networking, graph theory.

Wainer, Michael S., Associate Professor, Ph.D., University of Alabama at Birmingham, 1987; 1988. Computer graphics, HCI, parallel and distributed processing, visual programming.

Wright, W. E., Professor, D.Sc., Washington University, 1972; 1970. File organization, disk architecture, database systems, application software development.

Zargham, M. R., Professor, Ph.D., Michigan State University, 1983; 1983. Computer architecture, fuzzy logic, parallel processing, VLSI design.

The Department of Computer Science offers a graduate program leading to the Master of Science degree with a major in computer science. Application forms for admission to the Graduate School may be obtained from the department.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Admission and Retention

Decisions concerning the admission of students to, and retention of students in, the graduate program will be made by the department faculty subject to the requirements of the Graduate School.

The evaluation of applicants for admission is based primarily on the student's academic record with particular attention being given to past performance in relevant undergraduate course work. Applicants are expected to have a substantial background in undergraduate computer science courses covering high level and assembly language programming, data structures, computer organization,

logic design as well as discrete mathematics, calculus, and linear algebra. In most cases, it would be expected that the applicant has completed course work in the above subject areas prior to admission. Normally, a GPA of at least 3.0/4.0 is required by the Department of Computer Science. In addition, applicants must submit Graduate Record Examination (GRE) general test scores. It is recommended that results from the GRE subject area test (computer science or a related field) also be submitted.

Requirements. A student who has been admitted to the graduate program in computer science can meet the requirements for the Master of Science degree by completing 30 hours of graduate credit subject to the following constraints:

1. Each of the courses CS 401, CS 414, CS 451, and CS 455 must be taken. (If a specific course, or its equivalent, is already part of the student's academic background, an alternate course will be substituted.)
2. The 30 hours of graduate work must include at least four 500-level lecture courses.
3. Students are required to write a thesis carrying credit under CS 599. After completion of all work, the student will be given a final oral examination over the thesis and other course work.

Courses (CS)

401-3 Computer Architecture. Review of logical circuit design. Hardware description languages. Algorithms for high speed addition, multiplication and division. Pipelined arithmetic. Implementation and control issues using PLA's and microprogramming control. Cache and main memory design. Input/Output. Introduction to interconnection networks and multiprocessor organization. Prerequisite: 315 with a grade of C or better.

402-3 Theory and Applications of Computer Aided Design. A study of algorithmic techniques which solve high complexity design rules. Graph algorithms and formulations, randomized solutions, techniques from operations research and statistics, computational geometry algorithms and data structures are introduced. The techniques are mainly applied on the physical design/automation problem for integrated circuits and systems. Prerequisite: 315 and 355 each with grade of C or better.

414-3 Operating Systems. An extended treatment of the components of operating systems, including I/O programming, memory management, virtual memory, process management, concurrency, device management and file management. Prerequisite: 306 and 330 each with a grade of C or better.

416-3 Compiler Construction. Introduction to compiler construction. Design of a simple complete compiler, including lexical analysis, syntactical analysis, type checking and code generation. Prerequisite: 306 and 311 each with a grade of C or better.

420-3 Parallel and Distributed Computing. This course serves as an introduction to the areas of parallel and distributed computing. The major approaches to parallel programming, including shared-memory multiprocessing and message-passing multicomputing, will be covered in some detail. Students will have programming experience in each of these paradigms. Architectural considerations, algorithm design and measures of

performance will be covered. In addition, the course will provide an introduction to distributed computing on a network of computers. Parallel and distributed computing will be contrasted. Other approaches to parallelism including data parallelism (SIMD) and vector processing will be surveyed. Prerequisite: 306 and 355 each with a grade C or better.

430-3 Database Systems. A comprehensive treatment of database systems, including network, hierarchical and relational systems. Prerequisite: 330 with a grade of C or better.

435-3 Software Design and Development. An exercise in the analysis, design, implementation, testing, and maintenance of a large modular application system. Team production of a system is the focal point for the course. Topics include the system life cycle, system specification, human interfaces, modular design, improved programming techniques and program verification and validation. Prerequisite: 306 and 330 each with a grade of C or better.

436-3 Artificial Intelligence I. Search and heuristics, problem reduction. Predicate calculus, automated theorem proving. Knowledge representation. Applications of artificial intelligence. Parallel processing in artificial intelligence. Prerequisite: 311 and 355 each with a grade of C or better.

440-3 Computer Networks. Design and analysis of computer communication networks. Topics to be covered include queuing systems, data transmission, data link protocols, topological design, routing, flow control, security and privacy and network performance evaluation. Prerequisite: 315 and 355 each with a grade of C or better.

447-3 Introduction to Graph Theory. (Same as Mathematics 447.) Introduction to theory of graphs, digraphs, and networks and applications to electrical systems and computer science. Topics include blocks and cutpoints, Eulerian graphs, trees, cycle and cocycle spaces, planarity and Kuratowski's Theorem, connectivity and Menger's Theorem, Hamiltonian graphs, colorability and

Heawood's Theorem, flows in networks and Ford-Fulkerson Theorem, critical path analysis. Prerequisite: Mathematics 349 or consent of instructor.

449-3 Introduction to Combinatorics. (Same as Mathematics 449.) An introduction to combinatorial mathematics with computing applications. Topics include selections and arrangements, generating functions, recursion, inclusion and exclusion, coding theory, block designs. Prerequisite: Mathematics 349 or consent of instructor.

451-3 Theory of Computing. The fundamental concepts of the theory of computation including finite state acceptors, formal grammars, Turing machines and recursive functions. The relationship between grammars and machines with emphasis on regular expressions and context-free languages. Prerequisite: 311 and 355 each with a grade of C or better or graduate standing.

455-3 Design and Analysis of Algorithms. An extensive treatment of the design, analysis and complexity of algorithms. Efficient algorithms for classical problems. Introduction to complexity theory. Prerequisite: 330 and 355 each with a grade of C or better or graduate standing.

464-6 (3, 3) Numerical Analysis. (Same as Mathematics 475.) An introduction to the theory and practice of computation with digital computers. Topics include the solution of nonlinear equations, interpolation and approximation, solution of systems of linear equations, numerical integration, solution of ordinary differential equations, computation of eigenvalues and eigenvectors and solution of partial differential equations. Prerequisite: (a) Mathematics 221 and 250 and Computer Science 202 or equivalent programming proficiency; (b) Mathematics 305 and Computer Science 464a.

470-3 Computer Simulation Techniques. Applications and rationale. Design and analysis of discrete simulation models. Generation of random sequences and stochastic variates. Simulation languages. Prerequisite: 202 and Mathematics 380.

471-3 Introduction to Optimization Techniques. (Same as Mathematics 471.) Nature of optimization problems. General and special purpose methods of optimization, such as linear programming, classical optimization, separable programming, integer programming and dynamic programming. Prerequisite: 202 and Mathematics 221 and 250.

472-3 Linear Programming. (Same as Mathematics 472.) Nature and purpose of the linear programming model. Development of the simplex method. Application of the model to various problems. Duality theory. Transportation. Assignment problem. Postoptimality analysis. Prerequisite: 202 and Mathematics 221.

484-3 User Interface Design and Development. Human-computer interaction and the importance of good interface design. Interface quality and methods of evaluation. Interface design examples and case studies. Prototyping and implementation techniques. Task analysis and the iterative design cycle. Dialogue techniques, basic computer graphics, I/O device, color and sound. Use of at least one interface toolkit and development methodology to complete an interface design

project. Prerequisite: 306 with a grade C or better.

485-3 Computer Graphics. Study of the devices and techniques for the use of computers in generating graphical displays. Includes display devices, display processing, transformation systems, interactive graphics, 3-dimensional graphics, graphics system design and configuration, low and high level graphics languages and applications. Prerequisite: 306 with a grade of C or better; Mathematics 150 and 221 are recommended.

490-1 to 6 (1 to 3 per semester) Readings. Supervised readings in selected subjects. Prerequisite: consent of instructor and department.

491-1 to 4 Special Topics. Selected advanced topics from the various fields of computer science. Prerequisite: consent of instructor.

492-1 to 6 (1 to 3 per semester) Special Problems. Individual projects involving independent work. Prerequisite: consent of department.

493-1 to 4 Seminar. Supervised study. Preparation and presentation of reports. Prerequisite: consent of instructor.

501-3 Advanced Computer Architecture. Hardware and software elements of multiprocessors, multicomputers, pipeline and array machines, data flow architecture and other state-of-the-art architectures. Design principles related to machine structures, interconnection networks, control software and hardware, data storage and access. Prerequisite: 401.

502-3 Design and Analysis of VLSI Systems. This course covers the theory, technology, fabrication and design of digital integrated circuits as they are commonly used in modern digital computers. The topics covered include techniques for solving problems occurring in VLSI and ULSI layouts, built-in self-testing, design for testability and logic synthesis. The course also treats additional selected advanced topics. Prerequisite: 401 and either 402 or consent of instructor.

503-3 Fault-Tolerant Computing Systems. An introduction to different aspects of fault-tolerance in computing systems. Concurrent checking techniques. Redundancy techniques. Evaluation methods. System-level diagnosis and fault-tolerant VLSI architectures. Prerequisite: 401.

511-3 Formal Specification of Programming Languages. A survey of modeling techniques and meta languages for the formal specification of the syntax and semantics of high-level programming languages. Prerequisite: 311.

512-3 Declarative Programming. An advanced level course on nonprocedural programming with emphasis on logic programming, pure functional programming, and the characteristics of the declarative style common to these two paradigms. Topics include logic programming, functional programming, implementation consideration for each along with current research topics in the areas. Prerequisite: 311.

514-3 Advanced Operating Systems. Rigorous treatment of advanced topics in operating systems. Multiprocessor and distributed operating systems. Highly concurrent machines. Performance analysis of memory management and scheduling algorithms. Security in operating systems. Prerequisite: 414.

516-3 Advanced Compilers. A continuation of 416 including advanced topics in lexical and syn-

tax analysis, error recovery, sematic analysis, code optimization and compiler compilers. Prerequisite: 416.

520-3 Advanced Topics in Parallel & Distributed Computing. An advanced treatment of parallel and distributed computing; review of hardware and software considerations for parallel computation; development and analysis of parallel algorithms (with particular attention to the communication and synchronization costs associated with parallel algorithms); effect of granularity on performance; a comparison of the parallel and distributed programming paradigms including a detailed study of the central features of each approach; software systems for distributed computing including exposure to one or more distributed programming environments; the direction of parallel computing as suggested by recent, high level parallel languages; parallelizing serial programs; parallelizing compilers; future directions of parallel and distributed computing systems. The course will include a student project. Prerequisite: 420.

530-3 Advanced Data Base System. A detailed treatment of advanced topics in data base systems including, but not limited or restricted to, relational database theory, query optimization, recovery techniques, concurrency control, distributed database systems, security and integrity and database machines. Prerequisite: 430.

532-3 to 6 Topics in Information Systems. A detailed study of two or three topics relevant to information systems. Topics may include but are not limited to sorting, searching, information retrieval and automatic text processing, database security and encryption, distributed databases and data communication. Prerequisite: 430 and consent of instructor.

536-3 Artificial Intelligence II. Theorem proving, the Resolution Principle, strategies, and achievements. Program verification. Natural language processing. Other selected topics. Prerequisite: 436.

553-3 Formal Languages and Automata. The Chomsky hierarchy of formal grammars and the corresponding classes of automata. Turing machines and basic concepts of computability. Recursive and recursively enumerable languages. Closure properties. Undecidable problems about Turing machines and context-free languages. Deterministic context-free languages and the construction of LR parsers. Prerequisite: 451.

555-3 Computability and Complexity. Turing machines and other models of computation. Computable functions. Church's thesis. Solvable and unsolvable problems. Introduction to complexity theory including the classes P and NP. Polynomial time approximation algorithms for NP-complete problems. Prerequisite: 451.

564-1 to 12 Advanced Topics in Numerical Analysis. (Same as Mathematics 572.) Selected advanced topics in Numerical Analysis chosen from such areas as: approximation theory; numerical solution of initial value problems; numerical solution of boundary value problems; numerical linear algebra; numerical methods of optimization;

functional analytic methods. Prerequisite: consent of instructor.

570-3 to 9 per topic (3,3,3) Topics in Operations Research. (Same as Mathematics 570.) (a) Netflows. Builds on network and generalized network models for the transportation, transshipment, assignment, shortest path, maximal flow. Prerequisite: 472 or Mathematics 472. (b) Advanced computer simulation. Review of GPSS. Advanced topics in GPSS. Generation of random variates. Validation, parametric, and nonparametric tests. Design of experiments, optimization, parameter tuning. Analysis of variance, spectral analysis, and variance reduction. Prerequisite: 470 and Mathematics 480 or 483. (c) Large scale linear programming. Advanced L.P. techniques for sparse matrices and reinversion routines. Prerequisite: 472 or Mathematics 472. (d) Nonlinear programming. Integer programming with branch and bound and cutting plane methods for solving integer programming problems. Basic dynamic programming with emphasis on the methods and applications. Prerequisite: 472 or Mathematics 472.

585-3 Advanced Topics in Computer Graphics. Study of computer graphics for realistic image synthesis. Object modeling and associated data structures. Advanced rendering techniques such as raytracing and radiosity. Efficiency considerations. Image composition and compression. Current advances and research problems in realistic computer graphics. Prerequisite: 485.

586-3 Pattern Recognition and Image Processing. An introduction to the area of computer vision for the purpose of restoration, segmentation, encoding, analysis and recognition of pictures. Topics include: image transforms, edge detection, smoothing, filtering, pseudo-coloring, syntactic methods in scene analysis, parametric decision theory, non-parametric decision theory, linear discriminant functions, parameter estimation, supervised learning and unsupervised learning. Prerequisite: 220 and Mathematics 380 or consent of instructor.

590-1 to 9 Readings. Supervised readings in selected subjects. Graded S/U only. Prerequisite: consent of instructor and department.

591-1 to 9 (1 to 3 per topic) Special Topics. Selected advanced topics from the various fields of computer science.

593-1 to 4 Seminar. Preparation and presentation of reports. Graded S/U only. Prerequisite: consent of instructor.

599-1 to 5 Thesis. Minimum of three hours to be counted toward a master's degree. Prerequisite: consent of department.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Curriculum and Instruction

E-mail: MsMusic@siu.edu

COLLEGE OF EDUCATION

Aikman, Arthur L., Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1965; 1964.

Barrette, Pierre P., Associate Professor, Ed.D., University of Massachusetts, 1971; 1978.

Bauner, Ruth E., Associate Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1978; 1956.

Becker, Jerry P., Professor, Ph.D., Stanford University, 1979; 1967.

Bedient, Douglas, Professor, Ph.D., Southern Illinois University at Carbondale, 1971; 1969.

Boykin, Arsene O., Associate Professor, *Emeritus*, Ed.D., University of Illinois, 1964; 1972.

Bradfield, Luther E., Professor, *Emeritus*, Ed.D., Indiana University, 1953; 1955.

Butts, Gordon K., Professor, *Emeritus*, Ed.D., Indiana University, 1956; 1950.

Campbell, James A., Associate Professor, Ph.D., Ohio State University, 1978; 1989.

Casey, John P., Professor, *Emeritus*, Ed.D., Indiana University, 1963; 1964.

Copenhaver, Ron, Associate Professor, Ed.D., Indiana University, 1979; 1978.

Coscarelli, William, Professor, Ph.D., Indiana University, 1977; 1986.

Cox, Dorothy, Assistant Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1976; 1965.

Dale, Doris C., Professor, D.L.S., Columbia University, 1968; 1969.

Dixon, Billy G., Associate Professor and *Chair*, Ph.D., Southern Illinois University at Carbondale, 1967; 1961.

Eddleman, E. Jacqueline, Associate Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1970; 1969.

Erickson, Lawrence, Professor, Ph.D., University of Wisconsin, 1972; 1984.

Gilbert, Sharon L., Associate Professor, Ph.D., Ohio State University, 1988; 1988.

Gordon, Kimberly, Assistant Professor, Ph.D., Stanford University, 1993; 1994.

Gulley, Beverly, Professor, Ph.D., Southern Illinois University at Carbondale, 1974; 1975.

Harrington, Mary-Margaret, Assistant Professor, Ed.D., Peabody College of Vanderbilt University, 1995; 1995.

Hill, Margaret K., Professor, *Emerita*, Ed.D., Boston University, 1948; 1965.

Hungerford, Harold R., Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1970; 1965.

Jackson, James, Associate Professor, Ph.D., University of Wisconsin, 1976; 1976.

Jackson, Michael, Associate Professor, Ed.D., University of Florida, 1971; 1971.

Jones, Dan R., Associate Professor, Ed.D., Indiana University, 1978; 1978.

Karmos, Ann, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1975; 1975.

Killian, Joyce, Professor, Ph.D., Pennsylvania State University, 1980; 1981.

Lamb, Morris L., Associate Professor, *Emeritus*, Ed.D., University of Oklahoma, 1970; 1970.

Leming, James, Professor, Ph.D., University of Wisconsin, 1973; 1977.

Lindberg, Dormalee H., Professor, Ed.D., University of Missouri-Columbia, 1969; 1969.

Malone, Willis E., Professor, *Emeritus*, Ph.D., Ohio State University, 1950; 1939.

Matthias, Margaret, Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1972; 1969.

McIntyre, D. John, Professor, E.D., Syracuse University, 1977; 1977.

Mees, John D., Professor, *Emeritus*, Ed.D., Indiana University, 1950; 1946.

Moore, Eryn E., Assistant Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1976; 1968.

Nelson, Joann N., Assistant Professor, *Emerita*, Ph.D., University of Illinois, 1980; 1982.

Norris, William, Associate Professor, *Emeritus*, Ed.D., Indiana University, 1973; 1977.

Paige, Donald D., Professor, Ed.D., *Emeritus*, Indiana University, 1966; 1966.

Pearlman, Susan F., Associate Professor, Ph.D., University of Missouri-Columbia, 1987; 1989.

Post, Donna M., Assistant Professor, Ph.D., Pennsylvania State University, 1990; 1990.

Pultorak, Edward G., Associate Professor, Ph.D., Indiana University, 1988; 1988.

Quisenberry, James D., Associate Professor, *Emeritus*, Ph.D., Indiana University, 1972; 1971.

Quisenberry, Nancy L., Professor, Ed.D., Indiana University, 1971; 1971.

Randolph, Victor, Professor, *Emeritus*, Ph.D., George Peabody College for Teachers, 1942; 1933.

Seiferth, Berniece B., Professor, *Emerita*, Ed.D., University of Missouri, 1955; 1955.

Shepherd, Terry R., Associate Professor, Ph.D., University of Illinois, 1971; 1971.

Shrock, Sharon A., Associate Professor, Ph.D., Indiana University, 1978; 1984.

Sloan, Fred A., Professor, *Emeritus*, Ed.D., George Peabody College for Teachers, 1959; 1968.

Smith, Lynn C., Associate Professor, Ph.D., University of Georgia, 1984; 1984.

Solliday, Michael, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1975; 1967.

Volk, Gertrude, Associate Professor, Ph.D., Southern Illinois University, 1983; 1987.

Waggoner, Jan E., Assistant Professor, Ed.D., Memphis State University, 1990; 1990.

Wise, Kevin C., Assistant Professor, Ed.D., University of Georgia, 1983; 1986.

The Department of Curriculum and Instruction offers graduate programs leading to the Master of Science in Education and the Doctor of Philosophy in Education degrees. Within the programs, the student may select a specialty area from one of the following: curriculum and instruction, computer-based education, early childhood, elementary education, gifted and talented education, instructional development, instructional technology, mathematics education, reading and language studies, science and environmental education, secondary education, social studies education, and teacher education and supervision.

Admission

The applicant must complete the applications for admission to both the Graduate School and the department. General requirements for admission to graduate programs are described in Chapter 1 of this catalog. A selection and review committee screens the applicant on the basis of prior undergraduate and graduate work, grade point average, standardized test scores, work experience, and letters of recommendation, if needed. The committee may possibly recommend admission for a student with some deficiency if, in its opinion, the student shows unusual professional promise.

Application materials may be obtained by addressing a request to: Coordinator of Graduate Studies, Department of Curriculum and Instruction, Southern Illinois University at Carbondale, Carbondale, IL 62901-4610. Specific information may be obtained by calling 618-536-2441.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Master of Science in Education Degree

The Master of Science in Education degree in Curriculum and Instruction requires the completion of a minimum of 32 or 36 hours of course work, depending on the research requirement selected. At least 15 of the required semester hours must be at the 500 level and taken at SIUC. The student must also meet Curriculum and Instruction core course requirements, research requirements, and specialty area requirements. No more than 11 semester hours of credit earned at another college or university may be accepted toward this degree.

Each candidate's program is planned in consultation with a faculty adviser from the specialty area selected by the student, with consideration for the student's interests, experience, and specialty area. Unclassified graduate students are advised to consult with the department chair concerning admission to the master's program.

A student desiring teacher certification (preschool, elementary, secondary, or K-12) must be admitted to the Teacher Education Program and must follow the teacher certification entitlement process established by SIUC in conjunction with the Illinois State Board of Education.

Several areas of study offer coursework designed to meet certification or endorsement requirements set by the Illinois State Board of Education. Consultation with an adviser and a carefully determined program of study can lead to the desired certification or endorsement.

Admission and Retention. Admission to the master's program requires an overall minimum undergraduate GPA of 2.7 as well as the recommendation of the specialty area faculty. A TOEFL score is also required for international students. Students must maintain an overall 3.0 graduate GPA to be retained in the master's program. The progress of each student is reviewed periodically. Students who do not make satisfactory progress, or who violate the regulations of the department, college, or university, may be dropped from the program.

Program Requirements. The Master of Science in Education degree in curriculum and instruction requires a 9 semester hour professional core, specialty area courses (12 to 15 semester hours), and research. The professional core consists of C&I 500, Research Methods in Education; C&I 503, Introduction to the Curriculum; and C&I 504, Systematic Approaches to Instruction. The specialty area program consists of either 23 semester hours of coursework including a thesis or 27 semester hours of coursework and a research paper or project. The minimum number of required semester hours is 32 for students completing a thesis and 36 for students completing research papers or projects.

Each student is required to demonstrate research skill by preparing a thesis, research paper, or project. Each student must also successfully complete a final comprehensive examination. This examination may be written or oral, or both.

Doctor of Philosophy in Education Degree

The Doctor of Philosophy in Education degree with a concentration in curriculum and instruction is designed for teachers and other educational personnel who seek to improve their performance in general and specialized areas in either the public schools or the private sector. This program is designed for students who desire positions requiring advanced preparation at the highest level with emphasis on theories of curriculum and instruction and in-depth preparation in research. For example, this program is oriented toward students who aspire to positions with institutions of higher education, state departments of education in the United States, ministries of education in foreign countries, educational sections of human service agencies, business and industry, and public schools.

Admission. In addition to the application for admission to the Graduate School, the applicant must also complete the departmental application for admission to the concentration and the related specialty area. A selection and review committee screens the applicant on the basis of prior graduate work, grade point average, standardized test scores (Miller Analogies Test or Graduate Record Examination), research ability, work experience, and letters of recommendation. The TOEFL score is required for international students. The selection committee recommends admission of the student only if the specialty area has an appropriate sponsor for the applicant and if a faculty member who is qualified to direct dissertations agrees to serve as chair of the student's doctoral committee.

The admissions committee may possibly recommend a student for admission who shows some deviation from departmental standards if, in the committee's opinion, the student shows unusual professional promise.

Retention. Any prospective doctoral candidate with a grade point average of less than 3.25 and 20 semester hours of doctoral work will not be allowed to continue in the program and will not be re-admitted at a later date. Students must accumulate an overall grade point average of 3.50 for all doctoral work to qualify to take the preliminary examination.

Prior to the completion of 30 semester hours of course work, students meet with their major professors to determine whether or not to continue as doctoral students. Such matters as grade point average, progress in the program, course completion, motivation, and general academic scholarship skills in writing and research are considered. A report is then made to the doctoral committee and the department chair. Students who are not making satisfactory progress or who violate the regulations of the department, college, or university, may be dropped from the program.

Program Requirements. The concentration in curriculum and instruction has both College of Education and C&I requirements. A minimum of 64 semester

hours beyond the master's degree is required. The College of Education professional core of 8 semester hours consists of EDUC 590, Doctoral Seminar in Cultural Foundations of Education and EDUC 591, Doctoral Seminar in Behavioral Foundations of Education.

The C&I requirements include a core of 9 semester hours; at least 23 semester hours in the selected specialty area; research tools usually totaling 8 semester hours or the equivalent (hours for research tools are not counted in the total of 64 semester hours); and a minimum of 24 semester hours of dissertation. An internship of 2 to 8 semester hours is highly recommended. Courses comprising specialty area hours other than the core courses are determined by the student and the doctoral committee. The professional core of courses in the curriculum and instruction concentration is as follows: C&I 583, Instructional Theory, Principles, and Practices; C&I 584, Curriculum Theory, Foundations, and Principles; and C&I 582, Advanced Research Methods in Education.

Research Requirements. Research tools are selected on the basis of their appropriateness for the area of concentration, specialization, and type of dissertation research. At least one research tool, as outlined by the College of Education is selected by the doctoral committee in cooperation with the graduate student. The 8 options available are: quantitative methods, historical methods, foreign language methods, philosophical methods, qualitative methods, symbolic methods, and evaluative methods.

Preliminary Examination. The preparation and direction of the preliminary examination are the responsibility of the specialty faculty and the student's doctoral committee. Concepts related to curriculum, instruction, and research/evaluation will be integrated into the preliminary examination. Additional oral and written examinations may be required by the student's doctoral committee.

The examination will be offered 3 times a year: Wednesday, Thursday, and Friday of the fifth week of each term. A student may take the examination no more than 3 times.

Prospectus, Dissertation, and Final Oral Examination. Students may not register for more than 6 dissertation hours until they have been advanced to candidacy. Having been admitted to candidacy, students submit prospectuses to their doctoral committees for approval. The dissertation must show high attainment in an independent original, scholarly, and creative effort. A student's dissertation will be circulated to members of the doctoral committee at least 3 weeks in advance of the proposed defense.

The Department of Curriculum and Instruction requires an oral examination conducted by the doctoral committee. Oral examinations are open to all interested observers. Notice of the time and place of the examination and the abstract of the dissertation are circulated throughout the department and the University.

Courses (CI)

400-3 Simulation and Gaming. Analyzes the role of simulation and gaming in instruction, the availability of commercial games, board games, simulation devices and computer games and preparation of teacher-made games and simulations.

402-3 The Study of Cultural Diversity in Education and Family Services. The student examines origins, characteristics of behavior, learning patterns, family constellations and lifestyles of the diverse cultural groups in our community, state and nation. Students will identify their own

cultural background and biases; recognize diversity resulting from ethnic origin, gender, age or disability; and experience ways of learning about cultures other than their own that promote constructive communication and integration into all aspects of schooling, teaching and family services.

404-3 Infant Development. Current theories and knowledge concerning growth and development of infants with related laboratory field experiences. Prerequisite: 237 or Psychology 301 or equivalent.

405-4 Methodologies For Group Care of Infants and Toddlers. Application of theories of development of children up to age 3 in a care and child-centered environment. Development of competencies and skills needed by Early Childhood professionals. Two hour seminar and four hour practicum required.

407-3 to 9 (3 per topic) Diagnostic Teaching Strategies for Classroom Teachers. Diagnostic instruments and teaching techniques with an emphasis on understanding and teaching students underachieving in the areas of (c) Language arts, (e) Mathematics, and (f) Reading. Prerequisite: 423 for (c), 315 for (e), 312 for (f) and/or consent of instructor.

409-3 Creative Teaching. To assist pre- and in-service teachers in acquiring methods and materials that will improve instruction in the public school classroom, with special attention to the characteristics and needs of students. Prerequisite: Education 315.

410-2 Creative Writing in the Public School. Techniques of encouraging creative writings in the schools.

412-3 to 15 (3 per topic) Improvement of Instruction in Early Childhood Education (Preschool-Grade 3). Examines recent findings, current practices and materials used in early childhood education in the fields of (c) Language arts, (d) Science, (e) Mathematics, (f) Reading and (g) Social studies. Prerequisite: specialized methods course for the field of study selected by the student.

413-3 Language Development of the Young Child, 0-8 Years. The normal language development and communication skills of the young child will be the focus of this course; attention will be given to an integrated, holistic philosophy toward development and learning in young children ages 0-8; specifically focusing upon social and environmental influences on the development of language and literacy, students will observe, listen, record and analyze samples of young children's communication.

415-3 Modern Approaches to Teaching Middle School Mathematics (Grades 4-8). Examines current mathematics materials and teaching approaches. Hands-on experience with a multitude of teaching aids including microcomputers and problem solving materials. Student exchange of ideas and discussion of activities for classroom use. Prerequisite: 315 or consent of instructor and an overall gpa of 2.5.

417-3 Administration of Early Childhood and Family Programs. Planning and organizing programs for pre-school or residential facilities including budgeting, staffing, programming and evaluation. Prerequisite: 318 and 319.

418-3 History and Philosophy of Early Childhood Education. A survey of the history and philosophies of early childhood education with its implication for current program practices. Students' analysis of their personal philosophy of early childhood education. Prerequisite: 318, 319, senior or graduate standing.

419-3 Child, Family and Community Involvement. This course is designed to provide students with the knowledge and skills needed to work successfully with parents and parent groups in individual and community settings. The focus

will be on strengthening adult-child relationships and parent-staff relationships in home, school and community settings. Parent involvement in early childhood programs and parent education will be stressed. Prerequisite: 318 or consent of instructor for non-early childhood majors and/or graduate students.

420-3 Teaching the Adult Functional Illiterate. The emphasis in the course will be on understanding the problems of the individual whose literacy level does not permit full participation in the economic, social and civic opportunities available to the majority of citizens. Prerequisite: permission of instructor.

423-3 Teaching Elementary School English Language Arts. Oral and written communication processes with emphasis on the structure and process of the English language arts in the elementary school. Specific attention to the fundamentals of speaking English, writing, spelling and listening. Study of learning materials, specialized equipment and resources. Prerequisite: English 101, 102, Speech Communication 152 or 153 or equivalent, and a 2.5 overall gpa.

424-3 Teaching Elementary School Social Studies. Emphasis on the structure and process of teaching social studies in the elementary school setting. Specific attention to the fundamentals of developing social studies objectives, planning units, developing a general teaching model, organizing the curriculum and evaluating behavioral change. Study of learning materials, specialized equipment and resources. Prerequisite: Completion of two of the following: Political Science 114, Psychology 102, History 110; and overall gpa of 2.5.

426-3 An Introduction to Teaching Elementary School Science. Content and methods of elementary school sciences, grades K-8. Emphasis on the materials and strategies for using both traditional and modern techniques of science education. One or more field trips. Prerequisite: junior standing and an overall gpa of 2.5.

427-4 Science Process and Concepts for Teachers of Grades N-8. (Same as Botany 462.) Specifically designed to develop those cognitive processes and concepts needed by elementary school teachers in the teaching of modern science programs. Lecture three hours per week, laboratory two hours per week. One or two additional field trips required.

428-3 Inquiry Skills for Teaching Junior and Senior High School Science. The major focus will be the application of inquiry skills as used in all areas of science instruction at the junior and senior high school levels; students will be expected to demonstrate mastery of basic and integrated science process skills through conducting and reporting results of science investigations.

435-3 Literature for Children. Studies types of literature; analysis of literary qualities; selection and presentation of books and other media for children; and, integration of literature in pre-school, elementary and library settings. Prerequisite: junior standing, a minimum of 6 hours of college-level English and an overall gpa of 2.5.

437-3 Instructional Technology in Training Programs in Business and Industry. Examines the role that performance and instructional technology plays in current training practices in

business and industry. The organization, staffing, budgeting and evaluation of training and development departments is presented. The kinds of performance problems typically encountered by corporate training departments are addressed. Field trips are expected.

441-3 Multicultural Literature for Children. Identification, selection and evaluation of books and audiovisual materials dealing with various cultural groups such as African Americans, Asian Americans, Native Americans, Hispanic Americans and European Americans. Prerequisite: 435 or consent of instructor.

445-3 Literature for Young Adults. The selection and use of books and other educational media for students in the junior and senior high school.

452-3 Small Format Video Production in Education. An introduction to small format black-and-white and color video equipment in educational settings. Emphasis is on understanding the role of video as an instructional and informational tool and on the principles of design that determine instructional video's effectiveness.

455-3 Design and Development of Self-Instruction Systems. Introduction to the theory and practice of self-instruction systems with a particular emphasis on the creation of instruction for mastery. Various self-instruction systems are reviewed and procedures for designing, developing and evaluating these systems are discussed. Includes planning a teaching unit and creating a self-instruction package for the unit.

458-3 Classroom Teaching with Television. Classroom utilization of open and closed circuit television. Emphasis is placed on the changed role of the classroom teacher who uses television. Evaluation of programming, technicalities of ETV and definition of responsibilities are included. Demonstration and a tour of production facilities are provided.

461-3 Content Literacy Strategies. For middle grade teachers who desire strategies for helping students comprehend content encountered in narrative and expository text. Materials, lesson plans and teaching strategies to help middle grade students move from basic to more advanced reading, writing, studying and learning skills are featured. Prerequisite: 312 or 512.

462-3 Middle and Junior High School Programs. Focuses on the development of middle and junior high school curriculum and the identification of instructional activities which relate to the pre and early adolescent student. It is anticipated that the student will be able to plan and develop teaching units and evaluate procedures complementary to this portion of the school structure.

463-3 Meeting in Social and Emotional Needs of Gifted Children. Deals with strategies for meeting the social and emotional needs of gifted children in the classroom. In particular, this course focuses on low-incidence gifted students, including underachievers, minorities and females. The course will not only cover particular curriculum and instruction strategies designed for this population but also will emphasize strategies for teachers to be more facilitative in assisting these students to accept and realize their potential. Prerequisite: 467 or consent of instructor.

464-2 Student Activities. Analysis of extra-class activities and programs in public schools with a focus on the status, trends, organization, administration and problems.

465-3 Advanced Teaching Methods. The focus is on a variety of teaching methods and strategies which are appropriate for secondary and/or post-secondary educators. Both individual and group methods are emphasized.

467-3 Methods and Materials in the Education of the Gifted. Content focuses on the most appropriate instructional strategies and materials to be utilized with the gifted. Time spent practicing teaching models, designing materials and developing teaching units. Emphasis placed on techniques for individualizing instruction for the gifted and talented students.

468-3 Science Methods for Junior and Senior High Schools. A performance-based approach to instructional skills common to teaching natural science at the junior and senior high school levels. Three class hours and one micro teaching laboratory hour per week. Prerequisite: Education 315 or consent of instructor.

469-3 Teaching Social Studies in the Secondary School. Emphasis is placed upon instructional strategies and curricular designs in social studies at the junior and senior high school levels. Prerequisite: 315 or consent of the instructor.

473-3 Teaching in Middle Level Schools. Designed to acquaint students with the issues of teaching young adolescents and the unique role teachers must play as interdisciplinary team members, advisors and resource persons to connect schools and communities. Information from current research, area specialists and exemplary practitioners will be used to extend appropriate teaching strategies and supplement background knowledge on special topics related to social, emotional and physical development as it relates to the curricula. Attention is given to the development of classroom resource files for interdisciplinary and advisory programs. Prerequisite: 462, Education 310, 315 or permission of the instructor.

480-3 Introduction to Computer Based Education. Introduction to microcomputers and their uses in the classroom, including computer evolution, languages and authoring systems, instructional modalities, word processing, instructional management and software evaluation. Utility functions and basic commands in programming are also introduced.

481-3 Instructional Applications of Mainframe Computers. Design, development and programming of computer-assisted instructional materials using interactive, timesharing computer systems. Study of lesson design and programming, including branching and program flow, display techniques, response judging, teaching strategies, organization and style.

482-3 Instructional Internet Telecommunications. An introduction to the use of the Internet for instruction. Emphasis is placed upon examining the emerging use of Internet based resources and the role of the teacher in preparing to integrate network based learning activities in the classroom. Additional emphasis is placed on identifying skills needed by learners for involvement

with network resources. A variety of selected commercial and non-commercial computer based networks linked to the Internet are examined.

483-6 (3,3) Instructional Applications for Microcomputers. A study of the development and use of microcomputers systems in educational settings. Emphasis is upon the characteristics, capabilities, applications and implications of microcomputers and microcomputer lessons, with case studies of their integration into the teaching, learning process.

484-3 Multimedia Presentation Systems. Provides learners with skills in designing, developing and conducting classroom based multimedia presentations that involve computer and other electronic delivery systems including videodiscs and CDROMS. Emphasis is placed upon identifying major activities that contribute to effective multimedia presentations regardless of computing software or visual delivery system employed.

486-3 Instructional Authoring Systems. Designed to give students experience using authoring systems, languages and utilities for the design, production and integration of computer assisted instruction into educational settings. Tools will include Superpilot, Author and various commercial and consortium authoring tools. Prerequisite: 480 or consent of instructor.

487-3 Microcomputer Applications for Teachers. Laboratory instruction in the use of the microcomputer and software applications representative of those used by the teacher or education specialist in educational settings. An emphasis is placed upon developing skills used by teachers or education specialists which enhance and facilitate the education process.

495-2 to 8 Field Experience. Supervised learning experiences in settings for children and families and public agencies. Prerequisite: 318, 319, 405 and consent of instructor.

496-2 to 6 (2 to 4 per semester) Field Study Abroad. Orientation and study before travel, readings, reports and planned travel. Includes visits to cultural and educational institutions. Maximum credit hours in any term is 4.

498-1 to 15 (1 to 3 per topic) Workshops in Education. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices in each of the following areas: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood education, (i) Elementary education, (j) The middle school, (k) Secondary education, (l) School library media, (m) Instruction, (o) Environmental education, (p) Children's literature, (q) Family studies, (r) Computer based education, (s) Gifted and talented education, and (t) Teacher education. Maximum of six hours toward a master's degree. Prerequisite: consent of instructor.

500-3 Introduction to Research Methods in Education. An introduction to research methodology as it is applied in carrying out educational studies. Basic skills of planning, executing and reporting educational research will be studied

and applied, with the construction of a research proposal as a term project.

501-3 Improving School Reading Programs. For teachers, reading specialists, instructional leaders. Current issues, trends, practices in improving school reading programs at all levels. Special emphasis on school based management, teachers as change agents, curriculum evaluation, staff development and roles of school personnel. Participants assess existing programs and develop improvement plans. Prerequisite: 512, 513 or 561.

503-3 Introduction to the Curriculum. Deals with the nature, purposes and functions of curriculum planning and development; curriculum design and organizations; curriculum implementation and maintenance; and curriculum evaluation as each component relates to the total curriculum.

504-3 Systematic Approaches to Instruction. Gives graduate students an opportunity to investigate, discuss and apply systematic approaches to instruction. Special emphasis is given to that element of the instructional system which allows for the integration of instructional media into the process.

506-3 Professional Services for Diverse Family Structures. Case analysis of different family structures through seminar teams. Each team will be responsible for analysis of the interaction of the family structure and the economic, nutritional, and socializing activities carried out within the family-household. Role and sources of assistance through current programs will be included. Prerequisite: consent of instructor.

507-3 Impact of Public Intervention on Family Life. An analysis of implications of pending and existing legislation as it relates to the economic, nutritional and interactive aspects of the family treated as a system. Prerequisite: consent of instructor.

508-3 Systematic Observation and Analysis of Instruction. Students will learn to use conferencing techniques and to construct and use valid and reliable systematic observation instruments to provide the basis for analysis and feedback about classroom instruction.

509-3 Foundations of Environmental Education. Designed specifically to provide teachers, administrators and curriculum specialists with the knowledge and skills necessary to implement environmental education strategies in both elementary and middle schools. Includes work in ecological foundations, programs currently in use, unit designs, methods and research. One or two field trips may be required.

510-3 Values Education Curriculum. Alternative views of the impact of schooling on children's values will be explored. Current curricular approaches to moral education will be examined with special emphasis given to values clarification and the cognitive-developmental approach of Lawrence Kohlberg. Psychological and philosophical assumptions underlying the major approaches to moral education will be critically examined.

511-3 Seminar in Psychology of Elementary School Subjects. Psychological principles of learning theories as applied to the mastery of materials used in elementary and early childhood

education school subjects. Emphasis is placed on implications of theories of learning for curriculum development and instruction.

512-3 Reading in the Elementary School. First course in the reading sequence. Survey of the reading process. Introduction to factors affecting the reading process, the common core of skills, teaching strategies, materials and research.

513-3 Emergent Literacy. A study of early literacy. Explores the foundations of family literacy as the basis for continued development of reading and writing in kindergarten and the primary grades.

514-3 The Pre-School Child. Growth of the child from birth to six years with emphasis on the various aspects of growth and the interrelationships.

515-3 Advanced Remediation in Mathematics. Strategies for the design of prescribed systematic instruction for correcting identified mathematics difficulties. Experience in designing and preparing materials for corrective purposes. Prerequisite: 407e or consent of instructor.

516-3 Teaching Mathematics in the Elementary School. Master's degree level course which acquaints the student with approaches to teaching, development of curriculum materials and authoritative positions on the mathematics of grades K-8. Emphasis on teaching aids, problem solving and recent developments at this level. Prerequisite: 315 or consent of instructor.

517-3 Early Childhood Programs: Organization and Administration. Presents an overview of the organization and administration of programs for children ages three to eight with experiences in planning for operating and administering such programs. Prerequisite: 316, 518 or consent of instructor.

518-3 Early Childhood Curriculum and Methods. A survey of current problems and practices in early childhood education for children from three to eight years of age, with emphasis on reading in current research literature. Prerequisite: consent of the instructor.

519-3 Early Child Development Through Home and Preschool. The normal health development of children as it takes place in the home and is promoted by the curriculum of early childhood facilities. Prerequisite: Early childhood graduate students in curriculum and instruction who have completed all core courses.

521-4 Advanced Diagnostic Teaching of Reading. Emphasizes diagnostic teaching strategies that teachers and reading specialists employ when dealing with under achievement in reading. Students use informal and formal tests, observation and trial lessons to select instructional materials and activities appropriate to different reading/writing problems. Each student tutors persons while being supervised in the Clinical Center. Prerequisite: 512 or 513 or 561, 407f and consent of instructor.

523-3 Language Arts in the Elementary School. The practical bearing of investigation and theory on the improvement of current practices in the teaching of the language arts other than reading. Attention given to evaluation of teaching materials in these areas. Prerequisite: 423.

524-3 Teaching the Social Studies in the Elementary School. A study of theory and practices of teaching and developing programs in elementary school social studies. Particular attention to be given to trends and issues in social studies. Various social studies models will be examined and evaluated for practical use. Students must demonstrate behaviorally the competencies and skills related to successful performance in the teaching of social studies.

525-3 Applications of Microcomputers to Mathematics Education. Emphasis placed on using the microcomputer as a tool in problem solving. Instruction in programming in Pascal and operating the Apple microcomputer with special attention to practical use of materials in the mathematics classroom and exploration of various other uses of the microcomputer.

526-3 Problems in Elementary School Science Education. Emphasis upon identifying problems and trends within elementary school science education and planning for research in this field. Prerequisite: 426.

527-3 Advanced Family Studies. A study of factors that promote satisfactions with the immediate family; planning and preparing teaching units, and source materials in this field.

528-3 Methods for Teaching Mathematics in the Preschool and Early Childhood Grades (Pre K-3). Acquaints the student with the learning characteristics of children and teaching methods at grades pre K-3. Emphasis on concrete manipulative teaching aids, learning readiness and diagnosis of learning difficulties. Prerequisite: 315 or consent of instructor.

529-3 Modern Approaches to Teaching Secondary School Mathematics. (Same as Mathematics 511.) Topics will include problem solving, applications of mathematics and teaching proofs in secondary school mathematics. Practical classroom use of materials will also be emphasized. Prerequisite: consent of instructor.

530-3 Teaching Problem Solving in School Mathematics (Grades K-8-8). Designed to acquaint teachers with problem solving processes and how to integrate problem solving into their teaching. Emphasis is placed on teaching the process of problem solving. Prerequisite: graduate standing or consent of adviser.

531-3 The Elementary School Curriculum. An introductory course in curriculum designed to assist teachers and administrators in making operational decisions in elementary education which are based on knowledge of foundations of elementary education, organization of learning experiences, research in specialized areas, materials and methods, instructional programming and evaluation. Students are required to exhibit curriculum competencies through the creation of products and through demonstration of skill.

532-3 Courseware Design and Analysis. The analysis of principles and strategies employed in the design of computer based courseware and computer based training materials. Emphasis upon examining educational, social and psychological learning principles and the assumptions used by authors of computer software in the design of K-12 software and computer based training materials.

533-3 Instructional Leadership in Elementary Education. A study of research and related literature concerning various instructional leadership styles and behaviors. Major attentions given to such behaviors as they apply to the local school and the individual classroom situation.

534-3 Organization of the Elementary School. An analysis of types of elementary school organizations with special attention to influence of school organization upon the educational program. Application of research findings to selection and use of materials of instruction. Special consideration to classroom teacher's professional problems.

535-3 Reading and Language Arts Research Seminar. Students survey current research in Reading and Language studies and present a research paper to the seminar participants. Prerequisite: 500, nine hours coursework in reading and language arts, and consent of instructor.

540-3 Mass Communication in Education. The communication theories of recognized authorities in the field will be studied. These theories will be applied to the use of mass media in education. Radio, television, comic books, newspapers, magazines and motion pictures will be discussed.

551-3 Survey of Research and Developments in Educational Media. Survey of research, research techniques, needed research and new developments and programs in educational media. Prerequisite: consent of instructor.

553-3 Instructional Development. Intended for media specialists and instructional developers, this course applies current research and technology to the solution of instructional problems. The student is guided through the systematic process of identifying instructional problems, specifying objectives, analyzing tasks and learners, organizing resources, specifying methods and media and assessing outcomes. The role of the instructional developer as a helping professional will also be examined. Prerequisite: 504.

554-3 Utilization of Educational Media. The utilization of print and nonprint materials in instructional implementation and curriculum development. Structured for teachers, media directors, administrators and instructional designers. The increasing role of technological advances in education is stressed as they relate to learning theory and curriculum development.

555-3 Visual Communication. How to communicate with pictures in the classroom, the design of still and motion pictures, pictures used in teaching perception and the place of pictures in advertising and communication.

556-3 Learning Discovery Systems in the Computerized Classroom. Survey and use of learning discovery systems for microcomputers, especially LOGO. Course includes microcomputer operation, software utilization, program evaluation, creation and use of micro worlds in the classroom and cross-curriculum applications. Prerequisite: 480 or consent of instructor.

557-3 Task Analysis. Builds competence in applying the most current task and content analysis techniques used to make explicit the components of complex human performances and knowledge. Includes learning hierarchy analysis, information processing analysis, path analysis, job task analysis, skills analysis, fault tree analysis, concept

analysis, knowledge engineering, matrix analysis, and pattern noting. Prerequisite: 504 or consent of instructor.

560-3 Instructional Television. The field of educational broadcasting is explored, with special emphasis on public and school television. History and philosophy are included. Problems of programming and their effect on society are studied. The relationship between broadcasting and the viewing public is investigated, and the responsibility of each is established. Emphasis is also placed upon principles of ITV administration and inservice training.

561-3 Reading and Learning Content and Technical Text. For secondary and college teachers, and others who desire strategies to help students and workers learn from texts. Special emphasis is on how to help others improve their ability to comprehend, study and use texts and other print material encountered in secondary school and the workplace.

564-3 Curriculum Development for Gifted Students. Presentations related to the knowledge and decision-making required to develop curriculum for gifted students, including philosophy, goals and objectives; designing and sequencing activities; curriculum models for gifted students; evaluation and modification of curriculum. Emphasis is placed on the development of curriculum for gifted students to be used in schools.

566-3 Instructional Strategies for Problem Solving. The focus is on developing those teaching strategies which will foster and enhance problem solving skills and heuristic thinking. Representative of these teaching skills would be inductive and deductive approaches, discovery and inquiry techniques, and questioning strategies.

569-3 Principles and Trends in Secondary School Social Studies Education. An evaluation and study of social studies trends and practices as they are related to curriculum, organization and instruction at the junior and senior high school and community college levels.

571-3 Secondary School Curriculum. An introductory course designed to explore the nature and development of the curriculum at the secondary school level. Historical perspective and foundations of curriculum are examined. Functional applications to the public secondary schools are emphasized.

573-3 Perspectives on the Future and Its Schools. Deals with the future development of education and social trends which will influence that development. Emphasis is placed upon alternative models of education and their social bases.

575-3 Critical Issues in Instructional Supervision. Students will examine the history, nature and evolution of supervision for instructional improvement. Students will be introduced to concepts, theory and research findings from many fields of study that have implications for today's supervisory process. Supervisory assumptions and practices will be examined in light of current knowledge of teaching effectiveness.

576-3 Critical Issues in Teacher Education. Students will examine critical issues, problems, and trends in teacher education. Emphasis is placed on strategies for clarifying the issues, solving the problems and examining the possible impact of the trends.

577-3 Seminar in International Mathematics in Education. Deals with goals, contents, teaching methods, teacher training, curriculum development and research literature on mathematics education at the international level. Prerequisite: graduate standing or consent of adviser.

578-3 Advanced Study of Mathematics Education. Study of the practical and theoretical development of mathematics curricula and instruction, and viewing mathematics curricula and instruction from philosophical and psychological perspectives. Prerequisite: advanced graduate study or consent of adviser.

580-3 Current Trends in Education. Trends, issues, problems in education related to the student, program, school organization, staff, material and media, the school building, and the process of innovation and change.

582-3 Advanced Research Methods in Education. The study and application of advanced skills used in planning, executing, reporting and utilizing educational research. Prerequisite: 500 or evidence of equivalent research competencies.

583-3 Instructional Theory, Principles, and Practices. Presentation of conceptual formulations and skills concerning instructional theory and principles; foundations of instruction; instructional systems and models; delivery processes (logistics), systems, and maintenance of quality control; and evaluation of teachers and students.

584-3 Curriculum Theory, Foundations, and Principles. Presentation of conceptual formulations concerning curriculum theory and propositions; foundations: philosophy, sociology, and learning theories; the curriculum system and its components; crucial issues in developing a curriculum theory; and theoretical curriculum models: analysis and assessment.

585-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early Childhood education, (i) Elementary education, (j) The Middle school, (k) Secondary education, (l) School library media, (m) Instruction, (n) Educational technology, (o) Environmental education, (p) Children's literature, and (q) Family studies, (r) Computer based education, (s) Gifted and talented education, (t) Teacher education. Maximum of six hours toward a master's degree. Prerequisite: consent of instructor.

586-3 Curriculum Design and Development. Presentations concerning educational planning and curricular decision-making relating to curriculum: aims, goals, and objectives; nature of knowledge, disciplines, and subjects; curriculum structures: sequence and scope; substantive structural models; content and activity selection, product analysis and production; evaluation; and curriculum modification and change.

587-3 Curriculum Implementation and Evaluation. Attention is given to preparing the curriculum specialist to use appropriate techniques and skills to put curriculum programs into prac-

tice and to assess the effectiveness of such programs in terms of a wide range of variables which indicate success or need for curricular modification.

589-3 The Work of the Director of Curriculum and Instruction. The role of the director of curriculum and instruction is the focus of this course. Such topics as the background, current status, and tasks and functions of the position are examined. Additionally, such broad areas of the director's role as needs assessment, program planning and evaluation, and in-service education planning are covered. Prerequisite: 586 or 587 or consent of instructor.

590-1 to 15 (1 to 3 per topic) Independent Readings. Directed readings in literature and research in one of the following areas: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood, (i) Elementary education, (j) Middle school, (k) Secondary education, (m) Instruction, (n) Educational technology, (o) Environmental education, (p) Children's literature, (q) Family studies, (r) Computer based education, (s) Gifted and talented education, and (t) Teacher education. Maximum of four hours toward a master's degree. Prerequisite: consent of instructor.

593-1 to 15 (1 to 3 per topic) Individual Research in Education. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff, in one of the following areas: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood, (i) Elementary education, (j) Middle school, (k) Secondary education, (m) Instruction, (n) Educational Technology, (o) Environmental education, (p) Children's literature, (q) Family studies, (r) Computer based education, (s) Gifted and talented education, and (t) Teacher education. Maximum of three hours counted toward a master's degree. Prerequisite: consent of instructor.

594-(2 to 9 per topic) Practicum. For master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. Practicum is available in the following areas: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood, (i) Elementary education, (j) Middleschool, (k) Secondary education, (m) Instruction, (n) Educational technology, (o) Environmental education, (p) Children's literature, (q) Family studies, (r) Computer based education, (s) Gifted and talented education, and (t) Teacher education. A Maximum of nine hours credit may be applied toward a Master's degree. Prerequisite: consent of instructor.

595-(2 to 8 per topic) Internship. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school

system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. Internship areas are: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood, (i) Elementary education, (j) Middle school, (k) Secondary education, (m) Instruction, (n) Educational media, (o) Environmental education, (p) Children's literature, (q) Family studies, (r) Computer based education, (s) Gifted and talented education, and (t) Teacher education. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Prerequisite: consent of instructor.

599-1 to 6 Thesis. Minimum of three hours to be counted toward a master's degree. Prerequisite: admission to master's degree program.

600-1 to 32 (1 to 12 per semester) Dissertation. Minimum of 24 hours for the Doctor of Philosophy degree.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Economics

E-mail: mallett@siu.edu

COLLEGE OF LIBERAL ARTS

Chau, Nancy, Assistant Professor, Ph.D., Johns Hopkins University, 1995; 1995. Economics development, international economics.

Cribari-Neto, Francisco, Assistant Professor, Ph.D., University of Illinois, 1994; 1994. Econometrics, macroeconomics.

Dibooglu, Selahattin, Assistant Professor, Ph.D., Iowa State University, 1993; 1993. International economics.

Ellis, Robert J., Jr., Associate Professor, *Emeritus*, Ph.D., University of Virginia, 1966; 1962.

Edelman, Milton, Professor, Ph.D., *Emeritus*, University of Illinois, 1951; 1950.

Färe, Rolf, Professor, Docent, University of Lund, Sweden, 1976; 1978. Microeconomic theory, mathematical economics.

Foran, Terry G., Associate Professor, Ph.D., Pennsylvania State University, 1970; 1969. Labor economics, monetary theory.

Grabowski, Richard, Professor, Ph.D., University of Utah, 1977; 1979. Economic development, international economics.

Grosskopf, Shawna, Professor, Ph.D., Syracuse University, 1977; 1977. Public finance, labor economics.

Jensen, Mark, Assistant Professor, Ph.D., Washington University, 1994; 1994. Monetary economics, econometrics, macroeconomics.

Laumas, G. S., Professor, Ph.D., Wayne State University, 1966; 1990. Macroeconomics, monetary economics.

Layer, Robert G., Professor, Ph.D., *Emeritus*, Harvard University, 1952; 1955.

Mitchell, Thomas M., Associate Professor, Ph.D., Brown University, 1985; 1983. Microeconomic theory; international trade.

Myers, John G., Professor, Ph.D., *Emeritus*, Columbia University, 1961; 1977.

Primont, Daniel, Professor and *Chair*, Ph.D., University of California, Santa Barbara, 1970; 1978. Microeconomic theory, mathematical economics, econometrics.

Sharma, Subhash C., Professor, Ph.D., University of Kentucky, 1983; 1983. Econometrics, statistics.

Trescott, Paul B., Professor, Ph.D., Princeton University, 1954; 1976. Monetary theory, economic development.

Wiegand, G.C., Professor, Ph.D., *Emeritus*, Northwestern University, 1950; 1956.

The Department of Economics offers graduate programs that lead to both master's and doctoral degrees. The master's degree is designed to be a twelve- to sixteen-month program in which the student takes courses in theory as well as an applied specialization. The doctoral program is built around a core of courses in microeconomics and macroeconomics and allows the student to specialize in two fields. The coursework towards the doctoral degree is expected to take three years and the writing of a dissertation one year.

Admission

The overall scholastic record and potential of the applicant for admission is more important than prior preparation in specific areas of economics. While undergraduate specialization in economics is desirable, the program is open to students whose undergraduate specialization has been in other fields. However, if the student has not had intermediate level microeconomics, macroeconomics, and statistics, remedial work may be required before admission to the department.

Application forms must be submitted to the Department of Economics. Application materials, as well as additional information, may be obtained from: Director of Graduate Studies, Department of Economics, Southern Illinois University at Carbondale, Carbondale, IL 62901-4515. Phone 618-536-7746.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

All applicants should take the aptitude portion of the Graduate Record Examination. Information on testing dates and places may be obtained by writing to Educational Testing Service, Princeton, New Jersey 08540. Scores should be sent to Southern Illinois University at Carbondale marked "Attention: Department of Economics." All exam scores must be received before admission.

Evaluations of applicants by the department are based on information from the application form, GRE scores, transcripts, and other information.

Applications not admitted to the Department of Economics who meet the Graduate School requirements may register for remedial courses as unclassified students. Such persons may be considered for admission to the Department of Economics at a later date, based on their performance in such remedial courses. This option is not available for international students.

Foreign applicants whose native language is not English must take the Test of English as a Foreign Language (TOEFL). The Department of Economics requires that the applicant score 550 or above for admission to the graduate program. The TOEFL must be taken no more than 24 months prior to the date when admission is sought. For information concerning TOEFL testing dates and locations, write to Educational Testing Service, Princeton, New Jersey 08540.

Entry into Ph.D. Program. A student with a master's degree must meet Graduate School admission requirements with a graduate grade point average of 3.25 (A = 4.0) or better. A student with a bachelor's degree must meet Graduate School admission requirements with an undergraduate grade point average of 2.7 or better. After meeting these requirements the bachelor's degree student will be initially admitted as a master's student. Upon passing the qualifying exam, taken after the first year of graduate study, the student will be given entry into the doctoral program. Application for entry should be made to the director of graduate studies in the Department of Economics.

Entry into the Master of Science Program. The master of science program is intended to serve as a terminal degree. A student with a bachelor's degree must meet Graduate School admissions requirements with a grade point average of 2.7. Application materials are available from the director of graduate studies in the Department of Economics.

Requirements for the Master of Science Degree

The master's degree prepares students for positions in government and business and for teaching at the junior college level. The general requirements for the Master of Science degree may be conveniently classed under two broad headings, course and hour requirements and thesis requirements.

Course and Hour Requirements. Those students who plan to receive the Master of Science degree as a terminal degree are required to have the following courses:

Economics 465 Mathematical Economics I

Economics 463 Applied Econometrics

Economics 540a Microeconomic Theory I

Economics 541a Macroeconomic Theory I

Each master's student must take at least one graduate director-approved, two-course specialization. In addition, each master's student must accumulate a minimum total of 30 graduate-level semester hours approved by the director of graduate studies. Of this minimum, 21 hours must be in Economics courses, excluding Economics 408, 440, 441, 443, 507, and 590, and 15 must be in 500-level courses.

Any student who earns six semester hours of C or below in Economics courses taken for graduate credit is subject to dismissal from the graduate program in economics. A 3.0 GPA in 400- and 500-level economics courses excluding Economics 408, 425, 436, 440, 441, 471, 501, 502, 510, 525, and 598 and in all other graduate courses must be maintained. Only 400- and 500-level courses may count toward the master's degree. Graduate students in economics cannot take Economics 408, 440, 441, or 443 for credit toward a degree in economics.

Thesis Requirements (M.A. and M.S.) The master's candidate in economics can fulfill the thesis requirement in one of two ways:

First, he/she may write a master's thesis. The thesis shall be supervised by a committee of at least three members of the graduate faculty and may be counted for 6 semester hours of credit as Economics 599. (Thus the thesis constitutes 6 of the required 30 semester hours.) Two copies of the approved thesis must be presented to the Graduate School at least three weeks prior to the date of graduation, to be bound and shelved in the library. One copy of the thesis is to be submitted to the Department of Economics. Upon completion of the thesis, the student will be awarded the Master of Arts degree.

Second, the student may enroll for 3 hours in Economics 598. The research paper required in Economics 598 will be accepted in lieu of a master's thesis when approved by the director of graduate studies for that purpose. Thus the research paper constitutes 3 of the required 30 semester hours. One copy is to be submitted to the Graduate School at least three weeks prior to the date of graduation, and one copy is to be submitted to the Department of Economics. Under this option, the student must take an additional graduate-level course for 3 semester hours. Upon completion the student will be awarded the Master of Science degree.

Doctor of Philosophy Degree

The Ph.D. degree prepares students for teaching and research positions in the academic world, for positions such as senior economist in private industry and consulting firms, and for government positions requiring advanced economic training.

Course Requirements and Qualifying Exam. In the student's first year of graduate work he/she will be required to take the following courses:

Economics 541a Macroeconomic Theory I
Economics 541b Macroeconomic Theory II
Economics 540a Microeconomic Theory I
Economics 540b Microeconomic Theory II
Economics 465 Mathematical Economics I
Economics 567a Econometrics I

At the end of the first year (June) the student will take a qualifying examination in microeconomic and macroeconomic theory. The student will be allowed at most two attempts at passing the qualifying exam.

Fields of Specialization. The student is required to pass examinations in two specialized areas in economics after completion of the appropriate coursework for credit and with the prior consent of the director of graduate studies. The Department of Economics offers the following fields of specialization: economic de-

velopment, international economics, monetary theory and policy, applied microeconomics, advanced economic theory, and finance. The first field exam will normally be taken at the end of the second year and the second field exam at the end of the third year. The student will be allowed to take a field exam at most two times.

Other Required Courses. Students are required to pass either Economics 450 (History of Economic Thought) or 420 (History of American Growth in the Twentieth Century). In addition, students are required to pass the following courses:
 Economics 511 Mathematical Economics II
 Economics 540c Microeconomic Theory III
 Economics 541c Macroeconomic Theory III
 Economics 567b Econometrics II
 Economics 567c Econometrics III

Dissertation

Upon completion of the coursework and passing of the exams discussed above, the student will then be admitted to candidacy for the Ph.D. This will normally occur after the third year of work. Following this, the candidate, in consultation with his/her dissertation chairperson, will form a dissertation committee and develop a proposal. After the proposal is approved, the student must complete a dissertation based on original research and successfully defend the dissertation before the faculty.

Courses (ECON)

408-3 Economics and Business Statistics II. A continuation of 308 which includes the construction, interpretation and use of economic data. Topics include correlation, regression, decision-making, index numbers, time series analysis, forecasting and other statistical techniques used in analyzing economic and business data. This course will not count as graduate credit for economics majors. Prerequisite: 308 or equivalent.

416-3 Money and Banking II. An examination of the principle institutions whose joint actions determine the supply of money in the United States economy. Emphasis is placed on the commercial bank operating as a firm within the Federal Reserve System. Policy issues are examined for the regulation of the banking industry as well as for the control of the domestic money supply. Prerequisite: 315 or 340 or 341 or consent of instructor.

419-3 Latin American Economic Development. Special attention to contemporary policy issues and alternative strategies for development. Among the topics included are inflation and financial reform, international trade and economic integration, foreign investment and agrarian reform. Prerequisite: 322 or 340 or 341 or consent of instructor.

420-3 The History of American Growth in the 20th Century. An analytical survey of American growth in the present century. Concentrates on problems associated with the United States' role as a world economic power and changes in economic institutions engendered by rapid technological change and the need to cope with such problems as income distribution, equity, the growing public sector, inflation, unemployment and others. Prerequisite: 340 or 341 or consent of instructor.

429-3 International Trade and Finance. Analysis of the pattern and volume of world trade and capital flows; effects of trade and payments on the domestic economy; problems and methods of adjusting to change in the balance of payments. Prerequisite: 340 and 341 or consent of instructor and Mathematics 140 or 150 or consent of instructor.

431-3 Public Finance II. State and local. Analysis of the economic effects, problems and alternative solutions concerning state and local government expenditures, revenues and debt. Prerequisite: 330 or 340 or 341 or consent of instructor.

436-3 Government and Labor. Influence of government and law on collective bargaining, on the internal operation of unions, and on job discrimination in the public and private sectors. Prerequisite: Political Science 114 and Economics 113 or equivalents or consent of instructor.

440-3 Price, Output and Allocation Theories. A systematic survey of theories of product prices, wage rates, rates of production and resource utilization under conditions of competition, monopolistic competition, oligopoly and monopoly markets. Emphasis is on developing analytical tools useful in the social sciences. Not open to students who have had Economics 340. Prerequisite: 215 or consent of instructor.

441-3 Contemporary Macroeconomic Theory. An examination in the causes of inflation, unemployment, and fluctuations in aggregate economic activity, factors affecting consumption and investment, and the sources of economic growth. Emphasis is on understanding contemporary United States macroeconomic problems and the options for fiscal, monetary and income policies facing the United States government. Not

open to students who have had 341. Prerequisite: 214 or consent of instructor.

450-3 History of Economic Thought. An analytical study of the development of economic ideas, with special reference to historical and societal context, central thrust and impact. Such benchmark figures as Smith, Marx, Marshall, Veblen and Keynes are highlighted and major schools of economic thought are identified. Prerequisite: 214 and 215; or Economics 113; or consent of instructor.

463-3 Introduction to Applied Econometrics. Applications of statistical tools to specific economic problems. Numerous examples will be examined in order to achieve this goal. Emphasis will be given to model misspecification, non-classical estimation techniques, data analysis and simultaneous equations. Prerequisite: 408 or consent of instructor.

465-3 Mathematical Economics I. A systematic survey of mathematical economics. Application of basic mathematical tools to economic analysis, and a restatement of economic theory in mathematical terms. Prerequisite: 340 or 440 and Mathematics 140, or consent of instructor.

474-3 Antitrust and Regulation. The theory and practice of government policy toward imperfectly competitive markets. Includes such topics as merger policy, unfair trade practices, regulation of natural monopolies, peak load pricing, safety and environmental regulation, and consumer protection. Prerequisite: 340 or 374.

479-3 Problems in Business and Economics. Application of economic theory and tools of analysis to practical business problems. Cost and demand functions, and forecasting are analyzed from a policy standpoint. Prerequisite: 240; 308 or Management 208; Marketing 304; Mathematics 140 or 150, or consent of instructor.

500-3 to 24 (3 per topic) Economics Seminar. A study of a common, general topic in the field of economics with individual reports on special topics. Prerequisite: consent of instructor.

501-1 to 21 Economics Readings. Readings from books and periodicals in economics. Master's degree students limited to a total of six hours. Prerequisite: consent of instructor and chair.

502-1 to 4 Readings in Resource Economics. (See Forestry 590.)

507-1 to 4 (1,1,1,1) Practicum in Undergraduate Teaching. Emphasizes teaching methods, source materials, and preparation of classroom materials. All teaching assistants must enroll. One hour of credit per semester. Graded *S/U* only.

510-2 Research in Economics: Design, Methodology and Presentation. Systematic approach to economic research. Includes research planning and design, exploration of the various sources of data and most frequently used methodology. The last part of the course is concentrated on techniques for communicating the results of research. Prerequisite: consent of instructor.

511-3 Advanced Mathematical Economics. A continuation of topics in 465 with more emphasis on proofs. Topics include economic applications of integration, differential equations and real analysis. Prerequisite: 465 and Mathematics 211, or consent of the instructor.

512-3 Seminar in Labor Institutions. Multidisciplinary approach to collective bargaining in

the private and public sectors, considering industrial relations theory and the economic effects of collective bargaining. Readings and cases. Prerequisite: 310 or equivalent or consent of instructor.

517-3 Monetary Theory and Policy. A survey of contemporary monetary theory and related policy issues. Prerequisite: 541 or consent of instructor.

518-3 Monetary Theory and Policy II. Contemporary topics in monetary theory and policy, including analysis of the roles of money in inflation and economic growth, and an appraisal of the conduct and impact of monetary policy. Prerequisite: 517 or consent of instructor.

520-6 (3,3) Economic Development Theory and Policy. (a) Classical, neoclassical, and modern contributions to the theory of development; theories of underdevelopment. (b) Basic approaches to economic development; laissez-faire; balanced growth; unbalanced growth, role of government; methods of planning; and foreign aid. Must be taken in a,b, sequence. Prerequisite: consent of instructor.

522-3 Microeconomic Foundations of Labor Markets. The approach is theoretical. Topics include the theory of wage and employment determination, labor mobility, labor market imperfections, the special problems of minority group labor and trade union issues. Prerequisite: 538 or 540b or consent of instructor.

525-4 Seminar in Economics in Geography and Planning. (Same as Geography 522.) Public expenditure criteria based on free-market allocation, public, private, and merit goods and services, and related planning; expenditure criteria based on comprehensive plans; expenditure criteria and planning in the absence of general optimality; multiple objectives, measurement of benefits and costs, shadow prices, choice of techniques in planning; consideration of uncertainty. Critical evaluations of applied work and models of development projects and programs by students. Prerequisite: 422 or consent of instructor.

530-3 Foreign Trade. Emphasis on the advanced theory of international trade, survey of significant literature in international theory. Study of more advanced tools of analysis. Prerequisite: 340 or 440 or consent of instructor.

531-3 International Finance. Application of theory to current international economic developments. Empirical studies. Prerequisite: 329 or consent of instructor.

532-3 Economics of Human Resources. The study of institutions and policies designed to solve manpower problems. Emphasizes such topical areas as unemployment, underemployment, manpower training and development, labor market behavior, vocational education, labor problems of the handicapped, the aged, women, and minority groups, health economics, economics of education and poverty. Prerequisite: consent of instructor.

533-3 Public Finance Theory and Practice. Historical development of public finance theories with analysis of their policy implications. Prerequisite: 330 or consent of instructor.

534-3 Economics of Taxation. This course examines from a theoretical and applied point-of-view, various economic aspects of taxation. Other government revenue sources may also be analyzed

such as inter-governmental grants and debt. Emphasis is on application of microeconomic theory to problems in taxation. Usual topics include: equity in taxation, shifting and incidence of taxes, excess burden of taxes, other economic effects of taxes, tax reform, debt. Prerequisite: 330 and 340, or 440, or consent of instructor.

540A-3 Microeconomic Theory I. The course provides the basic theoretical knowledge necessary for microeconomic research in business and government. Prerequisite: 340 or 400 or consent of instructor.

540B-3 Microeconomic Theory II. A contemporary course in partial equilibrium analysis. Topics include the theory of the firm, market structure and the theory of the consumer. The course frequently takes an axiomatic approach; consequently there are many formal statements and proofs of theorems. Prerequisite: 465 and Mathematics 221, or Mathematics 150, 221 and 250 or consent of instructor.

540C-3 Microeconomic Theory III. A contemporary course in general equilibrium analysis. Topics include equilibrium in an exchange economy, equilibrium with production and welfare implications of general equilibrium. The existence and uniqueness of equilibrium and the concept of the core of an economy are studied in detail. Prerequisite: 511, 540b or Mathematics 352, or consent of instructor.

541A-3 Macroeconomic Theory I. The Rigorous development of general equilibrium macroeconomic models to analyze the determination of national income in the context of Classical, Keynesian, Neoclassical and Monetarist economic systems. Also included is the study of key sectoral demand functions. Prerequisite: 341 or 441 or consent of instructor.

541B-3 Macroeconomic Theory II. Continuation of 541A. Analyzes the ideas of New Classical and New Keynesians on the determination of national income. Focuses on the impact of rational expectations and the natural rate hypotheses on the effectiveness of macroeconomic policy. Also included are recent developments in the area of business cycles. Prerequisite: 541a.

541C-3 Macroeconomic Theory III. Recent developments and major issues in contemporary macroeconomic theory. Focuses on incorporating uncertainty, stochastic tools and dynamic analysis into macroeconomic theory. Prerequisite: 541b.

542-6 (3,3) Industrial Organization. (a) Industrial organization I. A study of the variety of forms of competition among firms. Topics include theories of the firm, oligopoly theory, theories of entry, product differentiation and innovation. Prerequisite: 440 and 441. (b) Industrial organization II. A survey of government policy toward industry. Topics include antitrust: mergers, concentration and unfair trade practices, regulation of public utilities, peak load pricing, product, safety and environmental regulation. Prerequisite: 440 and 441.

545-3 Resource Economics. A survey of theoretical and institutional aspects of energy production, distribution, consumption and regulation. Topics covered include cartel theory, history of energy use, theory of resource exhaustion, models of energy demand and supply, past and current

policy issues, and environmental protection. Prerequisite: 467 and 440, or consent of instructor.

546-3 Workshop in Resource Economics. A research seminar on topics related to energy production, distribution, consumption and regulation. Meetings will be divided among presentations of research of (a) faculty, (b) students, and (c) outside speakers, offered every semester. Maximum of three hours toward master's degree in economics. Prerequisite: 545.

552-3 Seminar in Economic Thought. An exploration of the basic philosophic assumptions which underlie the various types of economic thought with special emphasis upon the historical development of the premises of modern day economic theories. Prerequisite: 450a or 450b or consent of instructor.

566-3 Mathematical Economics II. Linear economic models. Linear programming. Input-output analysis and general equilibrium models. Prerequisite: 340 or 440 or 465 or consent of instructor.

567A-3 Econometrics I. Topics include distribution theory, statistical inference, hypothesis testing and classical linear multiple regression. The emphasis is on both theory and application. Prerequisite: 408, 465 and Mathematics 150, or consent of instructor.

567B-3 Econometrics II. Further topics in the theory and application of single equation econometric models including model specification, data problems, large sample results, non spherical disturbances, heteroscedasticity, autocorrelation and time series analysis. Prerequisite: 567a or consent of instructor.

567C-3 Econometrics III. Topics will include systems of regression equations and simultaneous equation models. Additional topics will be selected by the instructor from the following: models with discrete dependent variables, limited dependent variable model, nonlinear regression model, nonlinear optimization and estimation of stochastic equilibrium models. Prerequisite: 567b or consent of instructor.

570-3 Seminar in Contemporary Microeconomic Theory. An investigation of recent developments and current controversies in economic theory with emphasis on microeconomic problems. Prerequisite: 540b.

571-3 Seminar in Contemporary Macroeconomic Theory. An investigation of recent developments and current controversies in economic theory with emphasis on macroeconomic problems. Prerequisite: 541b or consent of instructor.

575-6 (3,3) Economic Theory I and II. (a) A rigorous treatment of the foundations of econometrics theory. Asymptotic theory is stressed. The single equation model is developed. (b) Rigorous treatment of simultaneous equations systems including identification, limited information estimation and full information. Properties of dynamic simultaneous equation models are developed. Inference is introduced into models which combine time series and cross-sectional data. To be taken in sequence. Prerequisite: 567b.

580A-3 Performance Measurement. Analysis of measurement of efficiency and productivity using frontier techniques. Focuses on theoretical and empirical specification of production frontiers and the evaluation of performance relative to

those frontiers. Duality theory is exploited to investigate performance in various economic environments. Prerequisite: 540a and 465, or consent of instructor.

580B-3 Welfare Measurement. A study of the theory and methods of constructing economic measures of price, quantity and other welfare indicators. Prerequisite: 540a, 540b and 465 or consent of instructor.

590-1 to 8 (1 per semester) Seminar in Contemporary Economics. Presentation and discussion of current research in economics. One hour credit per semester. Graded *S/U* only.

598-1 to 3 Research Paper. Preparation of a research paper for a master's degree. Prerequisite: consent of instructor.

599-1 to 6 Thesis. Minimum of four hours to be counted toward a master's degree. Graded *S/U* only.

600-1 to 36 (1 to 16 per semester) Doctoral Dissertation. Hours and credit to be arranged by director of graduate studies. Graded *S/U* only.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Doctoral Program in Education

Faculty in the concentrations listed below participate in this program. Refer to specific concentrations elsewhere in the catalog.

One may pursue a program of study leading to the Doctor of Philosophy degree in education through any of 6 approved concentrations: curriculum and instruction, educational administration, educational psychology, health education, special education, and workforce education and development.

Students must satisfy the requirements of the Graduate School in addition to the College of Education requirements for the Doctor of Philosophy degree in education. General policies pertaining to the Doctor of Philosophy degree in education are enumerated in this section; policies specific to each concentration may be obtained from the appropriate departmental chair.

For program descriptions of Master of Science in Education degrees, the student should review the material listed in this publication in the appropriate departmental section or consult the appropriate department.

Application

Applicants must submit the standard application materials to the department into which they wish to gain admission. A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted. Additional data may be requested by the faculty of the specific concentration. The student is encouraged to contact the appropriate departmental executive officer for specific guidelines.

Admission and Retention

The appropriate department reviews all documents relative to the student and makes a recommendation to the academic affairs committee of the College of Education; this committee makes the final admission recommendation through the dean of the College of Education to the Graduate School. Retention standards beyond minimum Graduate School standards are established by each concentration and are available from the departmental executive officer of the appropriate department.

Advisement

For each student a doctoral committee consisting of a minimum of 5 members is constituted and approved according to procedures described in the *Ph.D. Policies and Procedures Manual of the College of Education*. Copies of the manual can be

obtained from the dean of the College of Education. The doctoral committee also serves as the student's dissertation committee.

The program, planned to include all graduate study beyond the master's degree, should be approved at a meeting of the student's committee. The program is then forwarded to the dean of the College of Education for final approval and filing.

Program Requirements

Each doctoral student in education must successfully complete a prescribed core of 8 semester hours in social and philosophical foundations of education (EDUC 590) and in psychological foundations of education (EDUC 591). For each concentration there are also basic courses which should be completed prior to the student taking the preliminary examination. Information about these specific courses can be obtained from the appropriate departmental executive officer.

Research Competencies. The Ph.D. degree in education is a research-oriented degree. As such, it consists of a program of studies and other appropriate experiences designed to facilitate the acquisition of knowledge, attitudes, and skills necessary to conduct systematic intellectual inquiry. This overall aim is accomplished via two major program components: (a) general research competencies, including an understanding of the fundamental nature of approaches to problem solution and an appreciation for the role of research in professional education, are developed through completion of a minimum of 32 semester hours of course work in any of 8 approved concentrations, and (b) specific technical and methodological competencies are developed through completion of individually prescribed research tools. Such tools are selected on the basis of their appropriateness for the area of concentration in which the student is working and their relevance to the student's research interests. Research tools are applied in the process of completing requirements for the doctoral dissertation. A list of approved research tools for the Ph.D. degree in education is available in the *Ph.D. Policies and Procedures Manual of the College of Education*.

Preliminary Examination. All students in the Ph.D. program in education must take the preliminary examination over areas determined by the student's doctoral committee. In addition, the examination may cover areas specific to a concentration. The examination is offered 3 times a year: Wednesday, Thursday, and Friday of the fifth week of each term.

A student may petition the doctoral committee for permission to take the preliminary examination after successful completion of the research requirement, successful completion of all or most of the course work, and successful completion of the doctoral seminar sequence in education. A student who fails the examination on the initial attempt may take the examination 2 additional times. If at that time the student has not passed the examination, the student is dropped from the program.

Admission to Candidacy. A student may be advanced to candidacy after the student has completed the 2 doctoral seminars, EDUC 590 and 591, fulfilled the residency requirements for the doctoral degree (see degree requirement in Chapter 1), met the research tool requirement, and passed the preliminary examination. The doctoral committee chair should initiate the admission to candidacy forms and forward the forms to the dean of the College of Education. Admission to candidacy is granted by the dean of the Graduate School upon the recommendation of the dean of the College of Education. The doctoral degree may not be conferred less than six months after admission to candidacy, except upon approval of the dean of the Graduate School.

Dissertation. The doctoral committee consists of a chair who is authorized to direct doctoral dissertations and at least 4 others who are authorized to serve on doctoral committees. The committee is appointed by the dean of the Graduate School upon the recommendation of the dean of the College of Education. At least one member of the committee must be from a department other than that of the student and at least one member from a unit outside the College of Education.

In choosing a topic for the dissertation, the candidate should prepare a prospectus for the dissertation and submit the prospectus to the doctoral committee for approval. After the doctoral committee approves the prospectus, the chair of the committee files one copy of the approved prospectus in the office of the dean of the College of Education.

Satisfactory completion of the dissertation requirement includes the passing of an oral examination covering the dissertation and related areas.

Courses (EDUC)

450-1 to 10 Experimental Education. Offered for purposes of testing new and experimental courses and series of courses within the College of Education. Prerequisite: consent of instructor.

550-1 to 10 Experimental Education. Offered for purposes of testing new and experimental courses and series of courses within the College of Education. Prerequisite: consent of instructor.

590-4 Doctoral Seminar in Cultural Foundations of Education. This seminar is one of two courses required for all students pursuing a doctoral program in the College of Education. The primary objectives are to aid in the development of the Doctoral student's own nature and reflective theory of education; to help students pursue their scholarly activities in relation to the whole field of education; and to make the student aware of the resources of scholarship in other disciplines

which might be said to be foundational to education. Prerequisite: admission to the Ph.D. program in education.

591-4 Doctoral Seminar in Behavioral Foundations of Education. This seminar is one of two courses required for all students pursuing a doctoral program in the College of Education. The primary objectives are to aid the student in describing the attitudes, assumptions and practices which underlie empirical inquiry; to help the student to recognize the strengths and weaknesses of the various types of research in terms of methodology employed; and to aid the student in identifying and refining a research question and constructing a research design appropriate to answer the research question. Prerequisite: admission to the Ph.D. program in education.

Educational Administration

COLLEGE OF EDUCATION

Buser, Robert L., Professor, *Emeritus*, Ed.D., Indiana University, 1966; 1967.

Dennis, Lawrence J., Professor, Ph.D., Southern Illinois University at Carbondale, 1968; 1968.

Dunn, Randy J., Associate Professor, Ed.D., University of Illinois at Urbana-Champaign, 1991; 1995.

Eaton, William E., Professor and *Chair*, Ph.D., Washington University, 1971; 1971.

Evans, John, Associate Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1968; 1970.

Goldman, Samuel, Professor, Ph.D., University of Chicago, 1961; 1980.

McCadden, Brian M., Assistant Professor, Ph.D., University of North Carolina at Chapel Hill, 1995; 1995.

McKerrow, K. Kelly, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1986; 1994.

Sharp, William, Associate Professor, Ph.D., Northwestern University, 1978; 1991.

Verduin, John R., Jr., Professor, Ph.D., Michigan State University, 1962; 1967.

The Department of Educational Administration and Higher Education offers an approved major in educational administration leading to the Master of Science in Education degree. It also provides courses and instructional personnel for doctoral students who wish to concentrate in educational administration at the doctoral level. All degrees are NCATE approved. Interested applicants should direct inquiries to the admissions clerk of the department.

The Department of Educational Administration and Higher Education works cooperatively with the departments of Curriculum and Instruction, Educational Psychology and Special Education, and Workforce Education and Development in administering the State of Illinois General Administrative Certificate for per-

sons seeking positions as principals or directors of special education or vocational education. A master's degree and two years of public school teaching (or its equivalent), are required for the certificate. Students must make application for the administrative certification program through the department.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Master of Science in Education Degree

At the master's level, a concentration in educational administration is offered.

The Master of Science in Education degree in educational administration includes a 36 semester hour core consisting of:

EAHE 500-3 Education Research Methods

EAHE 501-3 and 503-3 Introduction to Educational Administration

EAHE 504-3 Introduction to Evaluation for Administrators

EAHE 505-3 School Finance and Facilities

EAHE 509-3 School-Community Relations

a principalship course (e.g. EAHE 507-3 The Secondary School Principal or EAHE 533-3 The Elementary School Principalship)

a curriculum course (e.g. EAHE 511-3 Organization and Administration of Curriculum)

a social foundations course (e.g. EAHE 430, 432, 454, or 560)

a supervision course (e.g. EAHE 523-3 Supervision of Instruction)

a school law course (e.g. EAHE 517 or 519); and EAHE 595-3 Internship.

A research report and comprehensive oral examination are also required.

Doctor of Philosophy Degree in Education

The Department of Educational Administration and Higher Education participates in the doctoral program in education with an approved concentration in educational administration. See the description of the Ph.D. degree in education.

Inquiries regarding application to their programs should be directed to the admissions clerk of the Department of Educational Administration and Higher Education.

Courses (EAHE)

402-1 to 3 Principles of Student Personnel Group Work. Acquaints the student with group work possibilities and functions in higher education.

430-3 History of Education in the United States. An historical study of the problems of American education.

432-3 Education and Social Forces. A study of the social forces that shape educational policies in the United States.

454-3 Contrasting Philosophies of Education. An examination of current educational problems and trends in the light of contrasting philosophies of education.

455-3 Introduction to Adult and Continuing Education. Introduces the multifaceted areas of adult and continuing education in traditional and non-traditional settings by reviewing and studying philosophies, directions, program efforts and activities associated with them.

495-3 to 9 (3,3,3) Workshop in Adult Education. The foci for these workshops are to provide quality educational experiences for students and practitioners in the field of adult and continuing education in three major areas: (a) current issues,

(b) improvement of instruction and programs in adult education, and (c) evaluation in adult education.

500-3 Educational Research Methods. Introduction to educational research and the variant methodologies used in conducting studies within institutional settings. Both quantitative and qualitative approaches will be examined.

501-3 Educational Administration: Tasks and Processes. An examination of the administrative tasks and processes dealing with interaction within the school organization and between the organization and its environment. Components will be viewed for their essential inter-relatedness as well as their unique aspects. Emphasis will be placed upon the processes by which change is brought about in dealing with decision making, programming, communication, motivating, controlling and evaluating.

503-3 Educational Administration: Introduction to Theory. Examination of the various administrative tasks in light of established organizational models and leadership theories. The student will be introduced to a variety of theories, models, and concepts that have pertinence to the

field of educational administration. Emphasis will be placed upon the methods of theory construction and the development of a theoretical orientation to the solution of administrative problems. The course draws heavily upon research done in the behavioral sciences.

504-3 An Introduction to Evaluation for Administrators. This course is designed to familiarize prospective and practicing administrators with the areas of personnel, program, and school evaluation. Specific topics include: purposes, constructs, models, instrumentation, procedures and responsibilities appropriate for school administrators.

505-3 Introduction to School Finance & Facilities. A study of the principles and issues of public school finance and facilities aimed at building level administrators. Included are the following: basic economy theory; local, state, and federal revenue systems; the state foundation concepts; equity; maintenance of school facilities; energy; technology and environmental factors; funding school facilities; and budgeting at the building level.

507-3 Secondary School Principalship. Deals with problems met specifically by the high school principal. Emphasizes the principal's role in relation to guidance, curriculum, schedule-making, extra-curricular activities, public relations, budgeting of time, etc.

508-3 Student Development Theories. A study of the major theories of human development as applied to college students with implications for the student affairs specialist.

509-3 School-Community Relations and Development. Practical and theoretical aspects of public relations as applied in general and as applied specifically to educational institutions and efforts. Involved are the practical and theoretical considerations of educational institutions assisting in the further development of the community or communities in which they find themselves.

510-3 Higher Education in the United States. An overview of American higher education in historical and sociological perspectives: its development, scope, characteristics, issues, problems, trends and criticism.

511-3 Organization and Administration of Curriculum. The organization and administration of the curriculum including the elements and sub-elements comprising a curriculum are the primary focus. Emphasis placed on a rationale, including the socio-cultural and psycho-philosophical factors, political forces and factors, goals, instructional activities and evaluation. This course has general application to both elementary and secondary curriculum organization.

512-3 Higher Education in Selected Nations. A study of higher education systems and trends outside the United States and of the role of the university in world affairs.

513-3 Organization and Administration in Higher Education. Theories and practices in governance of various types of higher education institutions with attention to problems of formal and informal structures, personnel policies, decision making, institutional self-study and societal-governmental relations.

514-3 Foundations of Adult Education. This course reviews the socio-cultural, historical, psy-

chological, economic and philosophical considerations found in the broad field of adult and continuing education and which serves as a foundation for instructional and curriculum development work in the field.

515-3 College Student Development: Operations and Policies. Study of organization, functions, and under girding principles and policies of student development and the related student personnel services and programs in contemporary colleges and universities including community colleges.

516-3 College Students and College Cultures. Study of the nature of students, the impact of the college on student development, and the nature of the college as a unique social institution. Study of student subcultures and the interaction between students, institutions, and communities.

517-3 The Legal Framework of Education. A study of administrative, judicial, statutory and constitutional laws which have application in American public schools.

518-3 College Teaching. Emphasis is given to teaching and learning styles, the teaching-learning process, specific methods of teaching, strategies to improve teaching, resources available to the classroom teacher, and methods of evaluating teaching. Other topics will include: models of effective teaching behavior, academic freedom and due process. Course also open to teaching assistants from other departments.

519-3 Illinois School Law. A study of administrative, judicial, statutory, and constitutional laws which have application in the Illinois public schools.

520-1 to 12 Current Issues in Educational Administration. An examination of current issues that affect the various administrative levels in educational systems. The issue selected receives intensive treatment and review.

523-3 Supervision of Instruction. The function of the principal and supervisor in the improvement of instruction and in curriculum development. Activities, methods and devices for improving the effectiveness of instruction stressed. Prerequisite: 511 or consent of instructor.

524-3 Curriculum Design and Policy. A study of assumptions, materials, methods and evaluation in the designs of various curricula in colleges and universities, with attention to curriculum resources and policy.

526-3 The Community College. A study of the characteristics and functions of the community or junior college in American higher education. Course content aids the student in developing a general understanding of the philosophy, objectives, organization, and operations of this significant institution.

527-3 School Business Administration. A study of the principles and practices governing management of business affairs of a public school system. Included are such topics as revenues, expenditures, accounting, auditing, reporting and applications of electronic data processing as a management tool. Practical experience is given in using the Illinois financial accounting manual as well as other managerial procedures. Detailed study is made of the role of the school business administrator in the local school district.

528-3 Finance in Higher Education. A study of financing higher education in American society and related economic aspects. Emphasis is given to sources of funds and management of financing in colleges and universities including budgeting, control, accountability and current trends.

530-3 Historical Research in Education. Seminar designed to explore the literature, methods and possibilities of historical research in education.

531-3 The School Superintendent and Board of Education. Focuses on superintendent-school board relationships. It investigates the administrative team's role and functions as they relate to leadership in educational policy making.

533-3 Elementary School Principalship. A critical study of research and writing with implications for the elementary principalship. Designed to meet many of the particular needs of persons interested in becoming elementary principals. Other persons such as teachers, superintendents and staff personnel will gain insight into problems and responsibilities of the elementary principal's role.

535-1 to 14 (a-n-1 to 3 each, s-1 to 6) Higher Education Seminar I. A series of seminars for specialized study of areas of administrative practice and policy. (a) Student personnel group work, (b) Law and higher education, (c) Student financial assistance, (d) Admissions and records, (e) Academic advisement, (f) Academic and faculty administration, (g) Current issues in student affairs, (h) Housing, (j) Non-traditional students/non-traditional delivery, (k) Women and higher education, (m) Student center, (n) Supervisory management in higher education, and (s) Selected topic.

537-3 The Adult Learner. The focus of study will be adult learners, their motivations, learning styles, needs, goals, life stages, life cycles and developmental patterns. Implications for adult learning will be sought.

539-3 Program Evaluation. This course is designed to enable an administrator to evaluate a school or agency program from inception through implementation, operation and final assessment. An emphasis will be placed upon formal and informal means of formative and summative processes utilizing evaluation diagnostics and instrumentation. Formalized accreditation standards and guidelines will also be examined.

540-3 Classics in Education. Primary attention will be given to Plato's *Republic*, Castiglione's *Courtier*, Rousseau's *Emile*, and Dewey's *Experience and Education*. Other authors such as Aristotle, Quintilian, Francis Bacon, Montaigne, John Bunyan, Benjamin Franklin, A. S. Neill, Karl Marx, and B. F. Skinner will receive additional consideration.

541-3 Personnel Evaluation and Administration. This course will provide the administrator with the concepts, strategies and assessment measures to evaluate and manage personnel in both simple and complex organizational settings.

543-3 Professional Negotiations. An investigation of the theory and practice of professional negotiations. Emphasis will be placed on understanding the roles of adversarial negotiations. Use will be made of cases and simulations.

545-1 to 16 (a through j, 1 to 3 each; s, 1 to 8) Higher Education Seminar II. A series of seminars for scholarly inquiry into significant aspects of higher education. (a) Community college administration, (b) Federal government and higher education, (c) Institutional research, (d) Current issues in higher education, (e) Problems of central administration, (f) Business and fiscal affairs, (g) History of higher education, (h) Sociology of higher education, (j) Adult and continuing education, (s) Selected topic.

547-3 Evaluating Educational Research. Emphasis on development of student skills as critical consumers of research in education. Standards and practices in research are reviewed with attention to evaluating and judging the quality of research reported in professional literature. The focus of the course is on quantitative research, although qualitative research will also be discussed. Prerequisite: 500 or equivalent.

548-3 Survey Research Methodology. A detailed examination of the methodology of survey research in the social sciences. In addition to the historical and philosophical foundations of social research, the techniques of developing indicators, sample selection, questionnaire construction and data collection by mail, telephone or personal interview will be outlined and practiced. Considerable attention will be directed towards the analysis of survey data using the university mainframe computer and statistical software. Prerequisite: 500 and Educational Psychology 506 (or equivalent) or permission of instructor.

549-3 Naturalistic Research Methodology. An advanced seminar dealing with the foundations, design, application, and implementation of the naturalistic or qualitative method of conducting research. The student is expected to develop a dissertation prospectus or an original research report using the naturalistic method of inquiry. Prerequisite: Doctoral standing or consent of instructor.

550-1 to 4 Higher Education Seminar III. An advanced seminar for doctoral students in higher education. Two hours required for all doctoral students. Prerequisite: Doctoral students only.

551-3 Politics of Education. An examination of the political setting of educational administration selected leadership practices, and a general study of leadership theory. This course is open to students in approved sixth-year and doctoral programs only. In addition to educational leadership related to the politics of education, emphasis is given to innovative and contemporary practices of school administration.

552-3 Seminar in Comparative/International Education. The formulation of a conceptual framework necessary to engage in analytical studies of educational systems here and abroad. This frame of reference will enable the professional educator or social scientist to analyze educational provisions that foster or retard social progress and change.

553-3 Planning Processes and Policy Development. Surveys issues involved with accountability in education. Explores in some detail various planning models. Examines concepts and strategies in public policy development. Open to approved sixth year specialist and Doctoral students.

554-3 Seminar in Philosophy of Education. An interpretation of modern educational problems and trends in the light of basic philosophical viewpoints. Excerpts from the leading philosophical writings are used. Prerequisite: 454 or consent of instructor.

555-3 Advanced Educational Administration Theory. An advanced seminar devoted to the study of classical and modern theories concerning the administration of complex organizations. Particular emphasis is placed on organizations as social units that pursue specific goals which they are structured to serve. The major areas of study are organizational goals, organizational structure and organizations and their social environment. Prerequisite: 503 or equivalent.

560-3 Education and Culture. A study of the concept of culture and its relation to the process of education.

588-3 to 6 General Graduate Seminar. Selected topics or problems in cultural foundations of education. Prerequisite: advanced standing and consent of instructor.

589-1 to 3 Doctoral Research Seminar. Limited to doctoral students formulating and preparing research designs for investigation and implementation. Graded *S/U* only. Prerequisite: consent of instructor.

590-1 to 6 Readings. Advanced reading in one of the following areas. (a) Administration, (b) Buildings, (c) Supervision of curriculum, (d) Finance, (e) School law, (f) Supervision, (g) Comparative education, (h) History of education, (i) Philosophy of education, (j) Sociology of education, (k) Adult and community education, (l) Higher education. Prerequisite: consent of instructor. Graded *S/U* only.

591-1 to 6 Individual Study. Individual inquiry into selected problems or special topics in higher education under supervision of a graduate faculty

member. Graded *S/U* only. Prerequisite: consent of instructor.

593-1 to 3 per topic Individual Research. Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in one of the following areas. (a) Administration, (b) Buildings, (c) Supervision of curriculum, (d) Finance, (e) School law, (f) Supervision, (g) Comparative education, (h) History of education, (i) Philosophy of education, (j) Sociology of education, (k) Adult and community education, (l) Higher education. Graded *S/U* only. Prerequisite: consent of instructor.

595-1 to 8 Internships. Theory and practice in educational administration or higher education with a work experience in an educational setting.

596-1 to 6 Independent Investigation. Field study required of each student working for the sixth year specialist degree. Graded *S/U* only.

597-1 to 6 Superintendent Internship. An internship conducted in a central administrative setting for fulfillment of the state of Illinois' Level III Administrative Certificate. Consent of student's adviser is required.

599-1 to 6 Thesis.

600-1 to 36 (1 to 12 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Educational Psychology

E-mail: lviernum@siu.edu

COLLEGE OF EDUCATION

Baeza, Jesus, Jr., Assistant Professor, Ph.D., University of Iowa, 1990; 1991.

Bardo, Harold R., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1972; 1968.

Beggs, Donald L., Professor and *Dean* of the College of Education, Ph.D., University of Iowa, 1966; 1966.

Bradley, Richard W., Professor, Ph.D., University of Wisconsin, 1968; 1968.

Brown, Beverly, Associate Professor, Ph.D., University of Iowa, 1974; 1974.

Cody, John J., Professor, Ph.D., University of Wisconsin, 1961; 1965.

Daniels, M. Harry, Professor, Ph.D., University of Iowa, 1978; 1978.

Deichmann, John W., Associate Professor, Ph.D., St. Louis University, 1969; 1969.

DeWeese, Harold L., Professor, *Emeritus*, Ed.D., University of Illinois, 1959; 1959.

Dillon-Sumner, Ronna, Professor, Ph.D., University of California, Riverside, 1978; 1978.

Elmore, Patricia B., Professor, Ph.D., Southern Illinois University at Carbondale, 1970; 1967.

Kelly, Francis J., Professor, Ph.D., University of Texas, 1963; 1965.

Leitner, Dennis W., Associate Professor, Ph.D., University of Maryland, 1975; 1974.

Lewis, Ernest, Professor, Ph.D., Southern Illinois University at Carbondale, 1971; 1970.

Mouw, John T., Professor, *Emeritus*, Ed.D., University of South Dakota, 1968; 1968.

Pohlmann, John T., Professor and *Chair*, Ph.D., Southern Illinois University at Carbondale, 1972; 1971.

Prichard, Karen K., Associate Professor, Ph.D., Kent State University, 1980; 1980.

Snowman, Jack, Professor, Ph.D., Indiana University, 1975; 1975.

White, Gordon, Assistant Professor, Ph.D., University of Iowa, 1969; 1971.

White, Lyle, Associate Professor, Ph.D., University of Iowa, 1988; 1989.

Woehlke, Paula L., Professor, Ph.D., Arizona State University, 1973; 1973.

Yates, J. W., Professor, *Emeritus*, Ed.D., University of Missouri-Columbia, 1951; 1964.

The Department of Educational Psychology and Special Education offers graduate studies that lead to the Master of Science and the Ph.D. degrees in educational psychology. In addition, completion of course work and supervised experiences that meet standards for state entitlement and certification of counselors is part of the degree programs. The purposes of these graduate programs are to prepare professional educational psychologists to engage in the practice of their specialization and to pursue research in their areas of interest. Programs are monitored to be in line with standards set forth by the American Association of Counseling and Development, the American Psychological Association, the North Central Association, and the National Council for Accreditation of Teacher Education. The counselor education program is accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP).

Professional experiences and interests of students along with the teaching and research capabilities of the faculty serve as a basis for individualized courses of study. Sufficient latitude in program planning is provided so that students in concert with their adviser and their committee plan programs to capitalize on student interests and faculty capabilities. Human learning and cognition, development, instructional psychology, child and adult counseling, marriage and family counseling, career development, measurement and statistics, and research design represent professional and research specialties of the faculty.

Master of Science in Education

Academic experiences leading to the Master of Science in Education degree are provided through concentrations in educational psychology and counselor education. Graduates from these programs are prepared to pursue advanced graduate studies and assume roles as professional counselors or educational psychologists in schools, colleges, and other agencies that serve the developmental needs of people.

Program Requirements. Core requirements consist of competencies in learning, quantitative methods, and development. Specific course selections to meet the degree program are determined by the students and their advisers with the approval of the department chair.

Completion of a thesis, research paper, or project (1-6 hours) is required to meet the requirements of a master's degree in education. A thesis requires a research format that follows a formal method of inquiry to provide answers to questions of a basic nature to the field. Research papers or projects focus on specific information-gathering procedures or a product that meets a need for specific purposes.

An oral or written comprehensive examination covering course work, thesis, research paper, or project is required before students can be recommended for graduation. The faculty of each concentration determines the specific nature of the examination.

Admission and Retention. Students seeking admission to master's degree studies in the department must apply to and meet requirements for admission to the Graduate School and be approved by the Department of Educational Psychology. Scores from the Graduate Record Examination (GRE), an undergraduate grade point average of 2.7 ($A = 4.0$) for unconditional admission (students with an undergraduate grade point average of 2.4 may be considered for conditional admission); letters of recommendation, and evidence of successful experience or commitment to the profession are required. Each student application is considered

on an individual basis. Professional qualifications, graduate courses taken, and student goals are also considered.

The adviser, along with the faculty of the specialty, is responsible for reviewing student progress each semester. Students are required to maintain a 3.0 grade point average and to be progressing toward their professional goals within the guidelines formulated in the advisement process. Failure to make progress or violations of department, college, or Graduate School regulations may result in dismissal from the program.

Specific information about programs and how to apply may be obtained by calling 618-536-7763 or writing to the chair, Department of Educational Psychology and Special Education, Southern Illinois University at Carbondale, Carbondale, IL 62901-4618.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

EDUCATIONAL PSYCHOLOGY

The master's degree concentration in educational psychology is a minimum 32-hour program. Students who wish to acquire fundamental knowledge and inquiry skills in human learning and research design are required to write a thesis (6 hours). Students who are more interested in applied positions may elect the research paper or project option.

Graduates from this program have taken positions as teachers, researchers, and instructional designers and evaluators in the military, schools, industry, and other institutions. Others have continued to pursue their education at the Ph.D. level.

COUNSELOR EDUCATION

Students who complete this program also fulfill the requirements of the entitlement program for certification in Illinois. This is a minimum 48-hour CACREP approved program that prepares students to work with children and adults in elementary and secondary schools, higher education, mental health settings, and other agencies or settings. Emphasis is placed on child, adolescent, adult, and marriage counseling. Programs that focus primarily on handicapped or abnormal populations are centered in other departments in the University.

Students who first pursue the program in educational psychology as a preparation for counseling certification should indicate this intent at the beginning of their program. In this manner, experiences can be planned to better meet the needs of the student.

Doctor of Philosophy Degree in Education

Advanced studies leading to a Ph.D. degree are offered by the Department of Educational Psychology. Individualized programs of sequential studies, based on a general core of foundation knowledges, are required for each candidate. Students along with their doctoral committee plan programs related to student background and interests, the professional requirements of the program, and the professional competencies of the faculty.

Faculty in the department provide research and professional competencies in counseling, cognitive development, instructional psychology, and measurement and statistics.

Application. Students must apply to the chair, Department of Educational Psychology and Special Education, Southern Illinois University at Carbondale, Carbondale, IL 62901-4618, 618-536-7763. Specific questions about programs and how to apply should be directed to the address identified above or by phone.

Admission and Retention. Applications are reviewed by the department faculty and recommendations forwarded to the College of Education and the Graduate School. Test scores from the Graduate Record Examination are required. A personal interview with a candidate may be required.

The performance of each doctoral candidate is reviewed each semester. Maintenance of 3.0 grade point average and compliance with policies of the department, the college, and Graduate School are also required.

Core Requirements. Students are required to meet core competence in learning, measurement, statistics, research methodology, and effective behavior. Specific courses or other means used to satisfy these areas are determined by the department upon recommendation from the student's doctoral committee. Students are expected to bring to the doctoral program a background of course work and experiences commensurate with a master's degree in educational psychology that includes foundations in psychology, education, and other related areas.

Research, Teaching, and Practicum Experience. Each student is required to demonstrate professional competence through supervised experiences. These experiences include research, teaching, and personal interactions in consulting, psychometric, or counseling situations. It is recommended that doctoral students take an approved internship in their area of professional specialization. Such internships are usually of a year's duration and must be approved by the department.

Preliminary Examinations. All Ph.D. candidates must complete a preliminary examination over their doctoral course work before formal admission to candidacy. The doctoral committee with the concurrence of the department is responsible for the development and evaluation of the preliminary examination.

Doctoral Committees. Students are assigned a doctoral adviser upon admission to the program. Before the end of the first year of doctoral study a doctoral committee is constituted. At this time a new chair may be chosen to head the committee which assists and evaluates students in their program. The committee is also responsible for an oral examination over the completed dissertation and student's general knowledge of the professional field.

Courses (EPSY)

Courses in this department may require the purchase of supplemental materials. Field trips are required for certain courses.

402-3 Basic Statistics. A master's level terminal statistics course. Emphasis on descriptive statistics and graphical representation of data. Includes a brief introduction to hypothesis testing procedure.

412-3 Human Behavior and Mental Health. A study of the principles of human needs, mechanisms of adjustment and factors and conditions in life that tend to affect mental health. Prerequisite: junior or senior standing.

418-3 Psychology of the Classroom. Intended to develop interpersonal skills such as values clarification, empathy and listening. Strategies for the resolution of conflicts and reasons for students demonstrating disruptive behavior will be discussed. Role-playing, group processes, concepts and activities in behavior modification, and activities related to concepts of discipline will be exam-

ined. Content should be suited to parents, teachers and other professionals.

422-3 Introduction to Individual and Group Assessment. The student will be introduced to the basic testing process and the problems related to individual group assessment and will be expected to choose a project for study and investigation. The project must be related in some way to the role and function of the counselor in different settings. The various types of assessment instruments and the manner in which the data derived therefrom can be employed in consultation.

442-3 Introduction to Counseling. The following topics will be covered: purposes of counseling; counselor roles in various settings; approaches to counseling; counseling activities; and application of the above.

481-1 to 12 Seminar. Conducted by staff members and distinguished guest lecturers on perti-

ment topics. Prerequisite: consent of instructor and department.

482-1 to 3 Seminar in Marriage and Family Counseling. Seminar will focus on current clinical and research topics in the field of marriage and family counseling and the general issues that emerge from the marriage and family counseling practicum. Prerequisite: 494a or b, 490, concurrent enrollment in 494e and permission of instructor.

490-3 Introduction to Marriage and Family Counseling. Problems and techniques of premarital, marital, divorce, family, and family crisis counseling. Counseling individuals singly, in family units, and in groups.

491-1 to 6 Special Research Problem—Individual Study. For majors. Formulating, investigating, and reporting on a problem in the area of applied psychology. Prerequisite: advanced standing and consent of department.

493-3 Counseling Skill Development. Through simulated counseling situations and extensive examination of counseling case studies, counseling skills are examined and practiced.

494A-3 School Counseling Practicum. A combined seminar, laboratory, and field experience representing the central focus of the program in school counseling. Enables the student to practice the role of the counselor under close supervision. Graded *S/U* only. Prerequisite: 493, 538; admitted to counseling program.

494B-3 Counseling Practicum. Practice of counseling skills with different populations in varied settings. The professional setting depends on the student's interest area. Individual and group supervision are provided. Use of tape recorder is required. Graded *S/U* only. Prerequisite: 493, 538, admitted to counseling program.

494C-3 Career Group Practicum. Supervision in the creation and maintenance of small group process for the purpose of career development. Application of theoretical models is stressed concurrently with entry level skills in the facilitation of small groups and career counseling. Graded *S/U* only. Prerequisite: 542, 543, admitted to counseling program.

494D-3 to 6 Practicum in School Psychology. Observation and participation in case conferences related to the development of psycho-educational assessment and planning, including teacher and parent consultation, field observations and psychometric applications. Graded *S/U* only. Prerequisite: 533, 546 and consent of instructor.

494E-1 to 6 Practicum in Marriage and Family Counseling. Supervised on-campus counseling experience with couples and families. Supervision will be individual as well as within the context of a therapy team. Graded *S/U* only. Prerequisite: 490, 493, 494a or b, concurrent enrollment in 482 and consent of instructor.

506-4 Inferential Statistics. Covers basic descriptive techniques such as central tendency, measures of variability and graphical presentation of data. In addition, hypothesis testing, analysis of variance, nonparametrics and simple linear prediction will be covered.

507-4 Multiple Regression. The general linear model is presented which allows for hypothesis testing including correlational analysis, analysis of variance and analysis of covariance. Non-linear

relationships are presented. Emphasis is placed on testing the stated research hypotheses. Prerequisite: 506.

508-4 Experimental Design in Educational Research. Strategies of designing research studies and the analysis of data from studies using linear models are examined. Emphasis will be placed on internal and external validity and factors that affect power in variance designs including completely randomized designs, Latin square, repeated measures and analysis of covariance with each of the above designs. Prerequisite: 506 or equivalent.

511-3 Instructional Psychology. Critical review of empirical, methodological and theoretical developments in the experimental study of instructional variables as related to student behavior. Prerequisite: Psychology 407 or equivalent is recommended.

512-3 Life-Span Development. Investigates physical, intellectual and social development throughout the life span. Provides information regarding learner characteristics and transitions. Focus is on applications for education, counseling and related services.

513-3 Psychological Trends in Education. Study of literature from B. F. Skinner, Carl Rogers, Erik Erickson, Abraham Maslow, John Dewey, Laurence Cremin, Jerome Bruner, Haim-Ginott, Clark Moustakas, A. S. Neill, John Holt, Charles Silberman, Thomas Gordon, Jean Piaget, Jerome Kagan, Sigmund Freud, etc., to provide the student with knowledge of contemporary psychological trends in education.

515-3 The Psychological Aspects of Instructional Design. Survey of applications of psychology to the design, delivery, and evaluation of instruction for cognitive and effective learning among individuals of differing abilities, including the gifted. Prerequisite: 511.

521-3 Consultation of Schools and Organizational Systems. Surveys the theories and available research on several approaches to consultation with families, schools and other organizational systems. Systemic approaches to consultation are emphasized.

525-3 Cross Cultural Factors Affecting Counseling. Designed to cover special problems of different cultural groups in the counseling process. The influence of culture upon values, beliefs, interests and feelings will be explored as they relate to the rights of the client.

530-3 Appraisal in Counseling. Principles and procedures for gathering appraisal and assessment information about people. Theoretical basis for describing and comparing individuals as well as assessing developmental stages and types will be covered. Particular emphasis will be the validity and reliability of data collection methods, interpretation of this information to individuals and procedures for selection of instruments.

531-3 Principles of Measurement. Intended to provide theoretical principles of measurement which are applicable to both teaching and research. Part of the course will be devoted to current issues in measurement and to practical applications to these theoretical principles. Prerequisite: 506.

532-3 Theories of Intelligence. Nature and assessment of intellectual behavior with emphasis

sis on the historical, theoretical, and developmental aspects of intelligence. Special attention is given to test standardization and interpretation of the Stanford-Binet and Wechsler Scales.

533-4 Individual Measurement and Practice. Psycho-educational assessment of individual mental factors with attentions to all aspects of administration, scoring, interpreting and utilizing the results of the Stanford-Binet Intelligence Scale, Wechsler Intelligence Scales for children and the Wechsler Adult Intelligence Scales. Additional charges not to exceed \$22 may be assessed for test kit rentals. Prerequisite: consent of instructor.

537-3 Counseling Children: Theory, Techniques, and Practice. The foundations and techniques of individual and group counseling with particular emphasis on theories, operational approaches, tools and related procedures. Prerequisite: 493 or concurrent enrollment.

538-3 Theories of Counseling. This course presents an overview of current theories of counseling with a special focus on the philosophical assumptions, key concepts, techniques and practical applications of each approach. Each of the theories will be examined critically such that the student can begin to formulate an integrated personal theory of counseling.

540-3 Issues and Trends in Counseling. Students will examine current problems, issues, and trends with an emphasis on strategies for solving the problems; clarifying the issues and placing them in proper perspective; examining possible ramification of the trends.

542-3 Career Development Procedures and Practices. For pupil personnel workers, teachers, and administrators to give an orientation to theoretical, economic, and informational aspects of career guidance and to provide experience with using career information in counseling and decision making. Obtaining occupational and information materials for use in guidance and teaching.

543-3 Group Theory and Practice. Focuses on the theory, functions, and techniques of group procedures appropriately applied to decision making, problem solving and resolution of conflict. Major emphasis is given to the dynamics of group behavior, the social-psychological interaction of small groups and their applications to group counseling. Dual emphasis is placed upon interpersonal self-understanding and the familiarity with group procedures. Prerequisite: 493.

546-4 Personality Assessment. Assessment of individual interest patterns, motivations, and perceptual systems with attention to theories and assumptions of selected projective and objective diagnostic tests. Focuses on student related problems in elementary and secondary education. Additional charges not to exceed \$22 may be assessed for test kit rentals.

547-3 Implementation of Counseling Services. Designed to furnish the prospective school counselor with knowledge and competency in planning and implementing a complete and integrated pupil personnel program for public schools. During the semester attention will be given to the parameters of such an integrated program, i.e., the function of a philosophical base; the principles which emerge from the philosophical position; the

planning strategies best suited to implementing such a program; the actual recommendations for personnel, facilities, and materials; evaluation techniques and strategies; methods of reporting progress to students, school personnel and the community, and an estimate of the per pupil cost. Prerequisite: experience in school counseling work, advanced standing in the counselor education program or equivalency to either of the above.

551-3 The Supervision of Practicum. Doctoral students will: become familiar with models of counseling supervision; practice supervision with master's students; and be acquainted with the research in the counselor training and supervision. Individual and group supervision are provided. Tape recording of supervision sessions is required.

555-3 to 6 (3,3) Seminar in School Psychology. Major professional issues and responsibilities; the school as a social system; ethical considerations; school related agencies and facilities; and professional organizations. Assists the student to prepare the project proposal required for the Specialists' degree. Prerequisite: consent of instructor.

562-6 (3,3) Human Development in Education. Theories and research evidence regarding child development and behavior are investigated. These considerations focus upon implications for research and educational practices. (a) Childhood. (b) Adolescent.

567-2 to 9 (2 to 6 per semester) Topical Seminar in Educational Psychology. Contemporary topics and problems in the area of educational psychology. Conceptual and empirical activities. Prerequisite: consent of instructor.

568-3 to 12 (3,3,3,3) Topical Seminar in Counseling. A series of advanced seminars in counseling. Sections a through c are to be taken only once. Section d may be repeated as topics vary. Students may take up to 12 credits only for 568. (a) Professional Orientation. (b) Advanced Theory. (c) Conducting Research. (d) Selected Topics. Prerequisite: admission to Ph.D. program.

570-3 Humanistic and Behavioral Theories in Education. Doctoral students will critically examine major humanistic and behavioral systems; evaluate the research dealing with the systems; and be able to apply the systems to educational problems.

580-2 to 29 (3,3,3,3,2,3,3,3,2 to 6) Doctoral Seminar in Educational Measurement and Statistics. A series of advanced seminars on statistics and measurement. Sections a through h may be taken only once each. Section i may be repeated as topics vary. (a) Advanced regression analysis. (b) Factor analysis. (c) Multivariate methods. (d) Nonparametric methods. (e) Evaluation methods. (f) Experimental design. (g) Advanced measurement theory. (h) Computer applications. (i) Selected topics.

590-3 Family and Systems. This course provides students with advanced study into the philosophical foundations, theoretical orientations, current research and practical applications of selected approaches to marriage and family counseling/therapy. Prerequisite: 490, 494e, 482, consent of instructor; 494e and 482 may be concurrent.

591-3 to 6 Internship in Counseling. For each three credits a supervised internship of 300 clock hours at a site that offers opportunities for individual counseling and group work. The internship provides an opportunity for the student to perform a variety of activities that a regular employed staff member would be expected to perform. A minimum of 120 hours of client services with clients is expected with on-site and on-campus supervision. Graded *S/U* only. Prerequisite: 494a or b and 494c.

592-1 to 8 (1 to 6 per semester) Independent Study and Investigation. For advanced graduate students. Topics of interest to the individual student are studied under supervision of a department staff member. Prerequisite: consent of department.

593-1 to 4 Individual Research. For doctoral students in educational psychology. Formulating, investigating, and reporting of research problems in the area of guidance and educational psychology. Prerequisite: consent of department.

594-1 to 6 Advanced Practicum. Primarily for advanced master's or doctoral students who want to continue developing their counseling skills. Counseling settings are individually arranged, however, they typically follow the 494 practicum experience. Graded *S/U* only.

595-1 to 8 Internship in the Psychology of Teaching. Full- or half-time teaching practice in the management of classroom behavior, and the design, delivery, and evaluation of instruction. Interns will be supervised by University staff.

Graded *S/U* only. Prerequisite: consent of department.

596-15 (5 per semester) Internship in School Psychology. The purpose of the internship is to provide an opportunity to integrate the broad range of skills requisite to a position in school psychology. The internship provides the student with a full-year of full-time supervised experience in a pre-approved setting. Enrollment assumes completion of a master's degree in educational psychology or a related area and all course requirements for the Specialist's degree in educational psychology. Graded *S/U* only.

597-12 (6,6) Doctoral Internship in Counseling. Doctoral or post-doctoral level students will be placed in an appropriate, full-time setting to engage in a variety of counseling services. On-campus and off-campus supervision will be provided by doctorate level counselors. Graded *S/U* only. Prerequisite: 591 and 594.

599-1 to 6 Thesis. Prerequisite: consent of department.

600-1 to 32 (1 to 16 per semester) Dissertation.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Electrical Engineering

E-mail: eedept@siu.edu

COLLEGE OF ENGINEERING

Botros, Nazeih M., Associate Professor, Ph.D., University of Oklahoma, 1985; 1985. Digital hardware design, digital signal processing, digital instrumentation, neural networks, robot sensing, bioengineering.

Brown, David P., Professor, Ph.D., Michigan State University, 1961; 1983. Active network theory, circuit and system theory, graph theory, matrix theory, large scale networks and systems, signal processing.

Daneshdoost, Morteza, Associate Professor, Ph.D., Drexel University, 1984; 1984. Electric power systems, linear systems and circuits, control systems optimization techniques, expert systems, computer graphics, MMI.

Dhali, Shirshak K., Professor, Ph.D., Texas Tech University, 1984; 1984. Plasma processing, gaseous electronics, lasers, superconductors.

Etienne-Cummings, Ralph, Assistant Professor, Ph.D., University of Pennsylvania, 1994; 1995. Analog and digital VLSI systems for machine perception, biological and artificial computational sensors, visual motion detection and navigation in hardware, image processing and computer vision.

Feiste, Vernold, K., Associate Professor, Ph.D., University of Missouri-Columbia, 1966; 1966.

Electric power systems, electrical machines, electric power distribution, distribution automation.

Galanos, Glafkos D., Professor and *Chair*, Ph.D., University of Manchester, England, 1970; 1987. Power systems, HVDC transmission, power electronics systems.

Goben, Charles A., Professor, Ph.D., Iowa State University, 1965; 1980. Physical electronics, surface and interface properties, nuclear and space radiation effects, integrated optics, fiber optics, optical, infrared and microwave surface wave properties.

Gupta, Lalit, Associate Professor, Ph.D., Southern Methodist University, 1986; 1986. Computer vision, pattern recognition, neural networks, digital signal processing.

Harackiewicz, Frances J., Assistant Professor, Ph.D., University of Massachusetts-Amherst, 1990; 1989. Electromagnetics, antenna theory and design, microwaves, microstrip phased arrays and anisotropic materials.

Hatziaodoniu, Constantine, Associate Professor, Ph.D., West Virginia University, 1987; 1987. Power systems, high voltage DC transmission, power electronics, modeling and simulation of non-linear circuits.

Hu, Chia-Lun John, Professor, Ph.D., University of Colorado, 1966; 1981. Microwaves and ap-

plied optics (Fourier optics, holograph, electro-optics), nonlinear and parametric wave systems (phase conjugation), neural networks.

Kagaris, Dimitrios, Assistant Professor, Ph.D., Dartmouth College, 1994; 1995. VLSI Design Automation, digital circuit testing, communication networks.

Manzoul, Mahmoud A., Associate Professor, Ph.D., West Virginia University, 1985; 1985. Fuzzy logic: hardware and applications, digital VLSI systems microprocessors.

Pourboghrat, Farzad, Associate Professor, Ph.D., University of Iowa, 1984; 1984. Systems control, robust and adaptive control, robotics, motion planning and self-organization, neural networks and learning systems.

Rawlings, Charles A., Professor, Ph.D., Southern Illinois University at Carbondale, 1974; 1964.

Biomedical engineering, clinical engineering, instrumentation, electronics.

Sayeh, Mohammad R., Associate Professor, Ph.D., Oklahoma State University, 1985; 1986. Neural networks, optical computing, image processing, stochastic modeling, quantum electronics.

Schoen, Alan, Professor, Ph.D., University of Illinois, 1958; 1973. Computational geometry, optimization, tiling theory, theory of polyhedra, elementary number theory, minimal surfaces.

Smith, James G., Professor, Ph.D., *Emeritus*, University of Missouri-Rolla, 1967; 1966.

Viswanathan, Ramanarayanan, Professor, Ph.D., Southern Methodist University, 1983; 1983. Detection and estimation theory, spread spectrum communication, communication theory, signal processing.

Master of Science Degree in Electrical Engineering

Southern Illinois University at Carbondale offers graduate programs of study and research leading to the Master of Science degree in electrical engineering. The Department of Electrical Engineering provides a rich environment for educational and professional advancement in the following areas: digital systems, computer engineering, artificial neural systems, expert systems, pattern recognition, communication systems, information theory, signal processing, robust systems, control systems, robotics, power systems, power electronics, electromagnetics, microwaves, solid state electronics, gaseous electronics, laser electronics, optical computing, and biomedical instrumentation.

The programs of study provide a balance between formal classroom instruction and research, and are tailored to the individual student's academic and professional goals. Graduates of the program enjoy excellent employment opportunities and are highly recruited for positions nationwide in industry, government, and academia.

Admission

The program is open to qualified individuals with a Bachelor of Science in electrical or computer engineering who satisfy the minimum admission requirements set by the Graduate School and the additional requirements of the department. Normally, a GPA of 3.0/4.0 is required by the electrical engineering department. Qualified applicants with Bachelor of Science in another branch of engineering, physics, chemistry, materials science, mathematics, statistics, or computer science may be able to enroll in the program with additional preparation. Admission to the program is granted by the chair of the department upon recommendation by the faculty.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Requirements

The thesis program leading to the Master of Science degree in electrical engineering requires 30 semester hours of credit. Of this total, a minimum of 18 hours must be within the department, a minimum of 21 hours must be at the 500 level, 6 must be for thesis research and 1 must be for EE 580, Seminar. The comprehensive examination refers to all of the candidate's program of study, including the thesis.

The nonthesis program leading to the Master of Science degree in electrical engineering requires 36 semester hours of credit. Of this total, a minimum of 21

hours must be within the department, a minimum of 24 hours must be at the 500 level, 3 must be for EE 592, the research paper, and 1 must be for EE 580, Seminar. The comprehensive examination refers to all of the candidate's program of study, including the research paper.

Assistantships, fellowships, and scholarships are available to the most qualified graduate students.

Further information about the program is available at the Department of Electrical Engineering, Tech. Building B, Room 139, Southern Illinois University at Carbondale, Carbondale, Illinois 62901-6603. The telephone number is 618-536-2364, and the facsimile number is 618-457-7455.

Courses (EE)

Graduate work in the Department of Electrical Engineering is offered toward a concentration for the Master of Science degree in engineering. Safety glasses are required for some of the courses in this department. Four-hundred-level courses in this department may be taken for graduate credit unless otherwise indicated in the course description.

424-4 Microprocessor-Based System. Microprocessor technology. Design, construction and programming of microprocessor-based systems. Lecture and laboratory. Cost of parts for microprocessor-based system, approximately \$80. Prerequisite: 427 or concurrent enrollment or consent of instructor.

425-3 Computer-Aided Design of Digital VLSI Systems I. Principles of using CAD tools in designing digital VLSI systems: stick diagrams, design rules and layout diagrams for CMOS technology. Design and implementation of custom VLSI integrated circuits. Projects. Prerequisite: 336 and 345 and 427.

427-4 Structure of Digital Computers. Introduction to structure and design of digital computers: central processing unit, arithmetic unit, memory organization including cache and virtual memory concepts, input and output systems, interrupts, direct memory access, hardwired and microprogrammed control units. Trends in computers. Lecture and laboratory. Prerequisite: 327.

428-4 Digital Hardware Design. Introduction to theoretical concepts and experimental design and construction of digital systems with a microprocessor as system controller. FPGA (Field Programmable Gate Arrays) or similar logic. Lecture and laboratory. Laboratory fee of \$10 to help defray cost of consumable items. Prerequisite: 427 or the consent of the instructor.

446-4 Electronic Circuit Design. Analysis and design of electronic circuits, both discrete and integrated. Computer-aided circuit design and analysis. Consideration of wideband, power and tuned amplifiers; switching circuits; feedback; and oscillators. Design projects. Lecture and laboratory. Laboratory fee of \$10 to defray cost of consumable items. Prerequisite: 336; 355 or concurrent enrollment; 345.

447-4 Electronic Devices. Physical mechanisms governing the operation of a wide variety of semiconductor devices. Applications of specific devices to illustrate performance characteristics. Device design related to terminal properties. Term paper on design. Lecture and laboratory. Prerequisite: 336 and 345.

448-4 Laser Electronics. Excitation and lasing in various liquid, solid and gas lasers. Techniques

and principles in design of laser system. Lecture and laboratory. Prerequisite: 375.

456-3 Control Theory. Fundamentals and techniques for analysis and design of linear, dynamic systems: Laplace transformation, signal-flow graphs, state variable equations, stability conditions, time-domain analysis, frequency-domain analysis, root-locus method and controller design. Prerequisite: 336 and 355.

458-3 Communications Theory. Signal transmission through linear system. Applications of Fourier transform in communications. Sampling theory. Digital coding of analog sources: pulse code, differential pulse code and delta modulations. Data transmission through telephone channels. Amplitude and frequency modulations; signal-to-noise ratio. Prerequisite 336 and 355.

459-3 Digital Control. Analysis and design of linear, discrete-data and digital control systems: z-transformation, state variable equations, stability criteria, time-domain analysis, frequency-domain analysis and digital controller designs. Prerequisite 456 or concurrent enrollment.

462-3 Biomedical Instrumentation. (Same as Physiology 462.) Diagnostic and therapeutic modalities related to engineering. Cardiovascular, neural, sensory and respiratory instrumentation. Prerequisite: consent of instructor.

465-3 Instrumentation. Measurement systems for research and manufacturing. Instrument characteristics. Digital and analog techniques and devices in instrumentation. Transducers. Signal conditioners. Displays. Control devices. Statistics of measurement. Lecture and laboratory. Laboratory fee of \$10 to help defray cost of consumable items. Prerequisite: 336 and 345.

468-3 Digital Signal Processing. Discrete-time signals and systems; sampling; z-transform; discrete Fourier transform; fast Fourier transform algorithms; digital filter design; digital filter realizations. Prerequisite: 355, 336.

476-3 Introduction to Broadband Communication Systems. Digital transmission fundamentals. Satellite, microwave, video coding and optical transmission. Prerequisite: 355 and 375.

477-4 Electromagnetic Waves. Transmission-line analysis. Phasor diagrams. Smith chart. General eigen-wave analysis. Guided waves.

Plane waves including optical waves. Oblique reflection and transmission. Non-reciprocal wave systems. Design of electromagnetic systems. Lecture and laboratory. Prerequisite: 375 or consent of the instructor.

478-3 Digital Communication. Application of probability theory and random processes in digital communication systems. Behavior of digital communication systems in noise. Performance comparisons of digital modulation systems. Optimum signal detection. Entropy and channel coding. Prerequisite: 355.

479-3 Electromagnetic and Optical Measurements. Fundamental measurement techniques in electromagnetic wave systems and optical systems. Accurate measurements of microwave properties of materials, laser transmission and reception, modulations and holographs. Prerequisite: 375.

483-4 Power Electronics. Power semiconductor devices. Power converters. Solid-state control of electro-mechanical systems. Lecture and laboratory. Prerequisite: 336, 345 and 385.

484-3 Computer-Aided Circuit Analysis. Network topology. Nodal analysis of linear and nonlinear networks. Standard form of state equations of linear networks. Numerical solution of state equations. Sensitivity calculations. Prerequisite: 336.

486-3 Electric Energy Sources. Principles and utilization of nuclear, solar and fossil-fuel generators. Direct energy-converters. Energy-storage devices. Cost of generating power. Prerequisite: 336 and 385, or consent of instructor.

487-4 Power Systems Analysis. Introduction to analysis of electric power systems. Modeling of power system components. Power system configuration. Per-unit quantities. Network analysis applied to power systems. Load flow. Lecture and laboratory. Prerequisite: 385.

488-3 Power Systems Engineering. Economic operation of power systems; symmetrical components; short circuit analysis; stability. Prerequisite: 487.

489-3 Electric Power Distribution. Design of primary and secondary distribution networks. Load characteristics. Voltage regulation. Metering. System protection. Technical and legal requirements in power distribution. Prerequisite: 487.

493-1 to 3 Special Topics in Electrical Engineering. Lectures on topics of special interest to students in various areas of electrical engineering. Designed to test new and experimental courses in electrical engineering. Prerequisite: consent of instructor.

521-3 Fault-Tolerant Computer Design. Concepts of error detection, location, and correction in digital systems. Codes for error detection and correction. Models and simulations of faults. Design of tests for combinatorial and sequential circuits. Testability. Design of digital systems with testability. Prerequisite: 427.

522-3 VLSI Circuit Testing. Theoretical and practical aspects of production testing of VLSI circuits. Relations between physical defects and fault models. Procedures for generating test inputs. Design modifications for test application and theory of built-in self-test. Prerequisite: 425, 527.

527-3 Switching Circuit Theory. Study of both combinational and sequential switching circuits with emphasis on sequential networks. Threshold logic. Fault detection and location in combinational circuits. Finite-state machines including: minimization, state assignment, races, state-identification. Asynchronous sequential circuits. Linear sequential machines. Prerequisite: 427.

528-3 Advanced Computer Design. Problems in analyzing and designing advanced architectures of advanced computers. Single-instruction, multiple data; multiple-instruction, multiple data machines. Overlap, pipeline, parallel and associative processing. Design of hardware for advanced input/output systems and interconnections among processors and memories. Memory organizations. Methods for evaluating performance of advanced computers. Prerequisite: 427.

529-3 Analog-to-Digital Conversion and Related Devices. Principles, analysis and design of analog-to-digital converters, video converters, voltage-to-frequency (V/F) and frequency-to-voltage (F/V) converters; universal synchronous/asynchronous receiver/transmitter circuits; hardware implementation of: Fourier analysis, infinite/finite impulse response (IIR/FIR) filters; micro-coded systems, fixed and floating point accumulators. Two projects. Prerequisite: 428 and 465 or consent of instructor.

536-3 Network Synthesis. Introduction to modern network synthesis. Driving point and transfer functions. Positive real functions, Foster networks, and Cauer networks. Active network elements. Synthesis using active elements. Prerequisite: 445 or consent of instructor.

542-3 Optical Information Processing. Fraunhofer and Fresnel diffraction, the reciprocity theorem, Kirchhoff's integral. General aspects of mutual coherence. Basic properties of recording materials. Phase transformation of thin lenses, Fourier transform properties of lenses, coherent optical information processing systems and applications. Introduction to holography and its applications. Prerequisite: 355.

544-3 Radiation Effects in Semiconductor Materials and Devices. A study of the effects of energetic photon, electron, and heavy particle bombardment effects on the properties of semiconductor materials and devices. Theory of material and device properties and operation. Theory of the interaction of radiation with matter. Acquisition and interpretation of experimental data. Prerequisite: consent of instructor.

545-3 Advanced Semiconductor Devices. Physical principles and operational characteristics of solid-state devices. p-n junction devices, Interface and thin-film devices, optoelectronic devices, and bulk-effect devices. Fabrication and circuit model of devices. Prerequisite: 447 or consent of instructor.

546-3 Gaseous Electronics. Basic science of gas discharges and plasmas. Electrode phenomenon and plasma oscillations. Application of gas discharges to dry etching, plasma-assisted chemical vapor deposition, and sputtering. Prerequisite: consent of instructor.

547-3 Solid-State Theory of Electronic Materials. Electronic properties of materials and their application to practical devices. Quantum and statistical mechanics. Semiconductor principles

and devices. Thermo-electric phenomena. Magnetic materials. Quantum electronics and lasers. Prerequisite: consent of instructor.

548-3 Advanced Electronic Devices. A study of techniques in fabricating microelectronic and discrete electronic devices and influences on device design. Thick-film hybrid, thin-film hybrid, monolithic bipolar, and monolithic MOS technologies will be examined. Prerequisite: 447 and Engineering 345.

549-3 Fiber Optics Communication. Fundamentals of step index and graded index fiber waveguides using geometrical optics and Maxwell's equations. Other topics include design criteria, practical coupling techniques, discussion of optical sources and detectors used in light-wave communications, system examples, characterization and measurement techniques. Prerequisite: 447 or 448 or consent of instructor.

551-3 Probability and Random Processes. Axioms of probability, random variables and vectors, joint distributions, correlation, conditional statistics, sequences of random variables, stochastic convergence, central limit theorem, stochastic processes, stationary, ergodicity, spectral analysis, mean square estimation, prediction, filtering. Prerequisite: 478 or Mathematics 483 or consent of instructor.

552-3 Detection Theory. Signal detection in white and colored noise. Random waveforms. Matched filtering. M-ary signal detection, non-parametric detection, sequential hypothesis testing, decision theoretic schemes. Applications in communication and radar signal processing. Prerequisite: 551 or consent of instructor.

553-3 Data Communications Network. Layering. Data link control. Capacity assignment. Time delay. Queuing theory. Routing and flow control. Multiple-access networks. Collision-resolution algorithms. ISDN and metropolitan area networks. Mobile radio. Prerequisite: 551, or equivalent course in probability theory and consent of instructor.

554-3 Spread Spectrum Communication. Concepts of spread spectrum systems, frequency hopping, and direct sequence systems. Anti-jamming performance analysis, synchronization schemes, and systems with forward error correction. Prerequisite: 552 or consent of instructor.

555-3 Information Theory. Introduce the foundations of information theory as related to data compression and transmission of information. Contents: Entropy, block encoding, Huffman code, universal code, capacity, channel coding, Ergodic Theorem, Shannon-McMillan Theorem, rate-distortion theory, quantization, predictive coding, multiterminal information networks. Prerequisite: 551 or Mathematics 480 or consent of instructor.

557-6 (3,3) Complex Systems. Theory, techniques, and philosophy of analyzing and designing complex engineering systems. Methods which maintain generality in dealing with complex combinations of diverse subsystems such as electrical, mechanical, chemical, transport, and biological. Prerequisite: 457 or consent of instructor.

558-3 Digital Image Processing. Basic concepts and techniques for digital image processing. Topics include image fundamentals and representation, image transforms, enhancement, restora-

tion, segmentation, description and classification. Prerequisite: 355 and 468.

559-3 Robust Methods in Communication. Introduce qualitative and quantitative robustness and several robust methods from the areas: estimation theory, detection theory and information theory. Topics: Robustness via continuity, Prohorov metric, breakdown point, influence function, minimax games, robust: parameter estimation, Kalman filter, prediction, hypothesis testing, matched filter, source and channel coding, quantization. Prerequisite: consent of instructor.

562-3 Advanced Biomedical Instrumentation. Scientific and mathematic analysis of instrumentation in diagnostics, therapeutics, and medical research. Purposes of instrumentation related to physiology and pathology. Prerequisite: 462 and 465.

563-3 Estimation Theory and Filtering. Parameter estimation for deterministic systems: least-squares, projection and persistent excitation methods. State and parameter estimation of stochastic systems. Bayesian estimation theory, maximum likelihood and maximum a-posteriori estimation. Optimal filtering. The Kalman recursive filter. Nonlinear estimation. Estimation bounds. Applications to communications and control. Prerequisite: 551 or consent of instructor.

564-3 Optimal Control. Optimization techniques for linear and nonlinear systems. Variational calculus. Dynamic programming. Pontryagin's maximum principle. Hamilton-Jacobi theory. Linear regulator. Bang Bang control, minimum time control, singular control. Discrete variational calculus. Combined estimation and control. Computational methods in optimal control. Prerequisite: 456 or consent of instructor.

565-3 Nonlinear Systems Analysis. Nonlinear systems, autonomous systems. Analytical approximation methods. Nonlinear differential equations. Stability of time-varying and nonlinear systems. Liapunov's method, input-output stability. Nonlinear discrete systems. Prerequisite: 456 or consent of instructor.

566-3 Adaptive Control. Adaptive systems and adaptation mechanisms. Error system models, direct and indirect adaptive control methods, self-tuning control, model reference adaptive control, variable structure adaptive control, robust control, learning control. Design techniques and applications. Prerequisite: 456 or consent of instructor.

572-3 Neural Networks. Anatomy and physiology of the cerebral cortex. Feed-forward Networks, Linear Associator, Multilayer Perceptrons. Feedback Networks, Hopfield Networks, ART. Applications to pattern recognition, robotics and speech processing. Optical and electronic implementations. Prerequisite: Mathematics 305 or consent of instructor.

573-3 Field Analysis of Guided Waves. Techniques of boundary value problems, general theories of guided waves, closed wave guides of arbitrary cross sections, open wave guides, Goubau lines and optical wave guides, Green functions applied to wave guide analysis. Prerequisite: 375 or consent of instructor.

574-3 Nonlinear Optics. Coupled-mode-analysis applied to nonlinear wave interactions, harmonic generation, parametric amplification, backward

wave amplifiers, backward oscillation in laser systems, phase conjugation and multiple-wave mixing systems, Pockel and Kerr effects, and electro-optical modulations in optical communication systems. Prerequisite: 375 or consent of instructor.

575-3 Analysis and Design of Neural Networks. Biological and artificial neural networks. Feedback and feed forward systems. Liapunov theories and numerical methods of solving nonlinear differential equations that describe artificial neural networks. Geometric properties in state space. Iterative and noniterative learning schemes in perceptrons. Application and optimal design of artificial neural networks. Prerequisite: Mathematics 305 (Differential Equations) or consent of the instructor.

576-3 Numerical Electromagnetics. Numerical solution of electromagnetic problems by methods that include finite element, integral equation, moment, spectral domain and finite difference. Examination of electromagnetic problems and their solutions in current literature. Prerequisite: 375, ability to program in FORTRAN, and consent of the instructor.

577-3 Antenna Theory and Design. The application of Maxwell's equations to radiating structures. Theory and design of antennas. Prerequisite: 477 or consent of instructor.

580-1 Seminar. Study and formal presentation by student of selected research in electrical engineering. Prerequisite: enrollment in program leading to Master of Science in Electrical Engineering.

582-3 HVDC Transmission. Static power conversion. Harmonics. Control of HVDC systems. Interaction between AC and DC systems. Design considerations. Faults and protection. Prerequisite: 487 or consent of instructor.

583-3 Control of Power Electronics and Drives. Properties of power semiconductor devices. Operating characteristics of AC and DC machines. Converters and cycloconverters principles and operation. Control of the DC motor. Control of the induction motor. Microcomputer application. Prerequisite: 483 or consent of instructor.

584-3 Advanced Computer Aided Circuit Analysis and Design. Network topology, nodal and mesh analysis of networks. Nonlinear net-

works, harmonics. State space analysis of networks. Sensitivity analysis. Prerequisite: consent of instructor.

586-3 Power Systems Analysis II. Techniques for solving power system problems. Network reduction. Load-flow, short-circuit, and transient-stability studies. Utilization of digital and analog computers. Prerequisite: 487.

587-3 Power System Operation and Control. Advanced mathematical and operations research methods applied to power systems such as economic dispatch, unit commitment, transmission losses, control of generation, power pools and power system security. Prerequisite: 488 or consent of instructor.

588-3 Advanced Electrical Network Theory. Graph theory. Steady-state solution of linear and nonlinear networks. Transfer function techniques. Sensitivity analysis for networks. Prerequisite: 484 or consent of instructor.

589-3 Advanced Electric Power Distribution. Analysis and design of distribution networks. Includes study of load characteristics, substations, feeders, and voltage-control and protection devices. Prerequisite: 489 or consent of instructor.

592-1 to 3 Special Investigations in Electrical Engineering. Individual advanced projects and problems selected by student or instructor. Prerequisite: graduate standing and consent of instructor.

593-1 to 3 Advanced Topics in Electrical Engineering. Lectures on advanced topics of special interest to students in various areas of electrical engineering. This course is designed to offer and test new experimental courses in electrical engineering. Prerequisite: consent of instructor.

599-1 to 6 Thesis.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Engineering

E-mail: shellie@enr.siu.edu

The College of Engineering offers graduate programs leading to the Master of Science degree in civil engineering, electrical engineering, mechanical engineering, mining engineering and manufacturing systems and a Doctor of Philosophy degree in engineering science. To support these graduate programs, the college has well equipped laboratories and computer facilities that are housed in a modern engineering complex. Additional research opportunities and funding are provided through the Coal Research Center, the Materials Technology Center, and the Office of Research Development and Administration.

Doctor of Philosophy in Engineering Science

Faculty in the departments of Civil Engineering, Electrical Engineering, Mechanical Engineering and Energy Processes, and Mining Engineering participate in this program.

The Doctor of Philosophy degree in engineering science is available for three concentrations in four engineering departments. The areas of concentration are as follows:

Areas of Concentration

Mechanics (solids, fluids, geotechnical, and materials). This area provides students with in-depth knowledge in solid mechanics, fluid mechanics, structures, experimental stress analysis, soil and rock mechanics, mine ground control, materials science and materials engineering. A student may select course work from 85 hours of existing 500 level engineering courses. Additional relevant courses may be taken in physics, mathematics, and geology.

Research thrusts include nonlinear response, ultimate strength, and instability behavior of structures under static and dynamic loading conditions; soil mechanics and foundation engineering; finite element modeling of fluid and mechanical systems; mechanics of composite materials and rocks; solid/liquid separation mechanics; field geotechnical studies in underground mines and tunnels; ceramics processing; and surface and interface phenomena.

Electrical Systems (computer engineering, communications and controls, power systems, electromagnetic and solid state electronics). A student interested in advanced study in this area of concentration may select from the following areas: digital systems, computer engineering, artificial neural systems, expert systems, pattern recognition, communication systems, information theory, signal processing, robust systems, control systems, robotics, power systems, power electronics, electromagnetics, microwaves, solid state electronics, gaseous electronics, laser electronics, optical computing and biomedical instrumentation. Approximately 114 semester hours of electrical engineering course work at the 500 level are currently available. An additional group of courses at the 500 level is available in the Departments of Computer Science, Mathematics, and Physics.

Current research in this area includes advanced voltage control systems, power systems, power electronics, neural networks, automatic speech recognition, multivalued and fuzzy logic, computer architecture, fault-tolerant computing and design, circuit and system theory, robust methods in communication, detection and estimation theory, computer vision, advanced control systems, optical computing, microwaves and antennas, plasma processing, and superconductivity.

Fossil Energy (mining, coal conversion, combustion, heat transfer, coal utilization, and pollution control). A student with interests in fossil fuel extraction and utilization and associated environmental problems or thermal sciences may specialize in this area. Typical course work includes mining, processing, combustion, thermodynamics, heat transfer, energy management, and conversion of fossil fuels, as well as environmental problems' abatement associated with fossil fuels. Over 75 semester hours of engineering course work at the 500 level are currently available. Other relevant courses in this area may be taken in physics, chemistry, and geology.

Current areas of research include desulfurization and refining of coal using a multitude of physical and chemical processes; recovery of coal from waste materials; surface-mined land reclamation; systems simulation of coal mining; coal conversion; advanced combustion systems; and combustion residues' disposal and utilization.

Admission and Retention

Regular Admission. Admission to the doctoral program requires a master's degree in engineering or its equivalent. Applicants for the doctoral degree must meet Graduate School admission requirements and be approved by the college graduate studies committee. A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted. In addition to Graduate School and other college requirements, the committee ordinarily requires a grade point average of 3.5 (4 point scale) in graduate level work. Applicants are required to submit GRE scores in support of their application for admission. Except for persons from English-speaking countries, international students are required to have a TOEFL score of 600 or higher for admission.

Accelerated Entry. After at least two semesters in residence in an engineering M.S. program and after completing 18 hours of approved coursework, a student may petition for accelerated entry into the Ph.D. program. Such entry is permitted only in special circumstances to superior students who have exhibited evidence that he/she is prepared to begin the research activities of doctoral-level study. In addition, the student must have an undergraduate grade point average of 3.5 or higher, have GRE scores that are at or above the 45th percentile for the verbal component, 80th percentile of the quantitative component and 80th percentile for the analytical component or a combined total percentage score of 225 or higher and have a TOEFL score of at least 600. In addition, the student must pass a college-administered qualifying examination.

Upon admission to the doctoral program, an interim graduate adviser will be assigned for each student by the college associate dean for academic affairs. This adviser will be responsible with the student for planning the student's course work. The college graduate studies committee will be kept informed of the student's program of study.

Transfer credit will normally be given for some of the graduate level courses suitable to the program upon review by the college graduate studies committee. Proficiency examinations may be authorized by the committee for areas in which questions of transfer credit arise. No credit will be given for industrial experience.

Notwithstanding the number of credits transferred towards the Ph.D. program, every student must complete at least 18 semester hours of approved course work at SIUC prior to taking the candidacy examination.

Retention is governed by the rules of the Graduate School. Students should avoid the accumulation of incomplete grades. No student with more than two incomplete grades can be awarded a graduate assistant appointment, and a student holding a graduate assistant appointment is subject to having the appointment terminated upon acquiring two or more incomplete grades.

Curriculum

A minimum of 32 semester hours of course work and 24 semester hours of dissertation research is required. The course work must be completed in 2 areas; area of concentration and program core. A student must complete a minimum of 15 hours of course work relevant to an area of concentration. The course work in this area will consist of courses in engineering, mathematics, or science. A minimum of 12 hours of electives must be taken in 500-level courses. Of these, a minimum of 9 hours must be taken in 500-level courses in engineering science. The course work in the area of concentration is intended to provide depth in the student's area of research. The program core consists of 17 hours of course work

in systems theory, design of engineering experiments, experimental data acquisition—theory and practice, advanced numerical methods in engineering, advanced engineering analysis (I and II), and engineering science seminar. A dissertation must be completed in the student's areas of research interest with the approval of the dissertation committee.

Program Core

ENGR 501-3 Advanced Engineering Analysis I (prerequisite: MATH 452 or equivalent)

ENGR 502-3 Advanced Engineering Analysis II (prerequisite: ENGR 501-3 or equivalent)

ENGR 520-3 Systems Theory (Prerequisite: MATH 305 or equivalent)

ENGR 530-3 Experimental Data Acquisition—Theory and Practice

ENGR 540-3 Design of Engineering Experiments (prerequisite: MATH 483 or equivalent)

ENGR 545-3 Advanced Numerical Methods in Engineering (prerequisite: EM 351 or EE 421, or MATH 475 or equivalent)

ENGR 580-2 Engineering and Science Seminars

A student must complete at least one of the advanced engineering analysis courses, the engineering science seminars and 4 of the 5 remaining courses. The research tool requirement is satisfied by completing the core courses.

Candidacy

A Ph.D. student must satisfy all Graduate School requirements. Acceptance to Ph.D. candidacy is contingent upon the successful completion of written examinations composed of questions that require substantive knowledge of experimental and theoretical topics in the program core and elective courses. However, questions are not limited to post-M.S. course work. The examinations are designed to evaluate the breadth and depth of the student's education, to encourage the student to organize and integrate knowledge, and to demonstrate the student's competence. The examination in the program core area will be the same for all students taking the examination at any one time. The examination in the area of concentration will vary depending upon the student's area of research. Each student is expected to pass the candidacy examination the first time it is taken. If a student fails to pass any component of the candidacy examination, the college graduate studies committee and the student's candidacy committee will review the student's examination performance, academic progress, and potential for successful completion of the degree. The joint committee will decide which examinations the candidate must retake, or it may decide to terminate the student's enrollment. In any event, the student will not be permitted to take the examination in areas more than twice.

Dissertation

A dissertation must be written under the direction or co-direction of an engineering faculty member and approved by a dissertation committee consisting of a minimum of five members, one of whom must be from outside the College of Engineering. The dissertation adviser must be chosen by the end of the student's first academic year. The dissertation committee must be formed no later than immediately after successful completion of the candidacy examination. The members of this committee need not be the same as the members of the candidacy examination committee.

A dissertation research proposal must be approved by the dissertation committee. Candidates will be required to present an acceptable dissertation describing original research performed with minimal supervision. Dissertation approval is based on a successful oral defense of the dissertation research and ap-

proval of the dissertation. This requires approval of at least 80 percent of the dissertation committee.

Graduation

1. All requirements of the Graduate School must be met.
2. A minimum of 32 hours of doctoral level course work must be completed with a minimum grade point average of 3.25.
3. An acceptable dissertation must be completed within five years after admission to candidacy or the student will be required to repeat the candidacy examinations.

Master of Science Programs

See Civil Engineering, Electrical Engineering, Manufacturing Systems, Mechanical Engineering, or Mining Engineering.

Courses (ENGR)

455-3 Engineering Geology. (See Geology 455.)

501-3 Advanced Engineering Analysis I. Series solution of ordinary differential equations, special functions of engineering analysis, vector analysis, partial differential equations of engineering analysis, the calculus of variations. Prerequisite: Mathematics 305, 450 or consent of instructor.

502-3 Advanced Engineering Analysis II. Origins of eigenvalue problems, operators on inner product spaces, spectral theorem with applications, Fourier series, two-point boundary value problems, special functions of engineering analysis, calculus of Fourier transforms with applications, generalized functions, discrete transforms, other related transforms. Prerequisite: 501 or consent of instructor.

520-3 Systems Theory. Analysis of continuous and discrete systems, equations of state for systems, z-transform analysis, concepts of stability, controllability, and observability. Prerequisite: Mathematics 450, or equivalent.

530-3 Engineering Data-Acquisition: Theory and Practice. Theory of data-acquisition and measurement systems. Methods of measurement of electrical, mechanical, fluidic, and thermal properties. Criteria for selection of instruments and components of management systems.

540-3 Design of Engineering Experiments. Planning of experiments for laboratory and field studies, similitude and modeling, statistical design of experiments, data analysis, generalization of research findings. Prerequisite: Mathematics 450, 483 or consent of instructor.

545-3 Advanced Numerical Methods in Engineering. Engineering applications of linear and nonlinear equations, unconstrained optimization, linear and nonlinear programming, numerical solutions of ordinary and partial differential equations, eigenvalue problems. Prerequisite: Mathematics 305 and consent of instructor.

550-3 to 9 (Maximum of 3 per topic) Advanced Topics in Mechanics. Topics will be offered in fluid mechanics, solid mechanics, structures, or materials. Advanced topics in fluid mechanics include: (a) Turbulence modeling, (b) Fluid transients, (c) Flow through porous media, and (d) Rheology. Advanced topics in solid me-

chanics include: (e) Theory and analysis of shells, (f) Theory of elasticity, (g) Viscoelasticity. Advanced topics in structure include: (h) Structural dynamics, (i) Nonlinear structural analysis. Advanced topics in materials include: (j) Fracture mechanics and dislocation theory (k) Advanced rock mechanics, and (l) Numerical methods in geomechanics. Prerequisite: consent of instructor.

551-3 to 9 (Maximum of 3 per topic) Advanced Topics in Fossil Energy. Studies of fossil energy extraction and conversion process with emphasis on scientific principles, analytical methods, and recent technological developments. Topics include: (a) Physical coal processing, (b) Fine coal beneficiation, (c) Coal chemistry and characterization, (d) Environmental issues of air and hazardous waste, (e) Advanced mining systems, (f) Network theory in mine ventilation, (g) Operations research applications to mining, (h) Solid carbon and coal derived materials. Prerequisite: consent of instructor.

580-1 to 2 Seminar. Study and oral presentation of selected problems in advanced engineering and science. Graded *S/U* only. Prerequisite: enrollment in the Ph.D. in engineering science program and consent of instructor.

590-1 to 6 (Maximum of 3 per semester) Special Investigations in Engineering Science. Investigation of individual advanced projects and problems selected by student or instructor. Prerequisite: admission into Ph.D. program in engineering science.

600-1 to 36 (1 to 16 per semester) Doctoral Dissertation. Dissertation research. Hours and credit to be arranged by director of graduate studies. Graded *S/U* only. Prerequisite: admission to Ph.D. in engineering science program.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

English

E-mail: gradengl@siu.edu

COLLEGE OF LIBERAL ARTS

- Appleby, Bruce C.**, Professor, *Emeritus*, Ph.D., University of Iowa, 1967; 1967.
- Bennett, Paula**, Associate Professor, Ph.D., Columbia University, 1970; 1991.
- Blakesley, David**, Assistant Professor, Ph.D., University of Southern California, 1989; 1989.
- Brown, William J.**, Associate Professor, Ph.D., Duke University, 1966; 1966.
- Brunner, Edward J.**, Professor, Ph.D., University of Iowa, 1974; 1991.
- Cogie, Jane N.**, Assistant Professor, Ph.D., University of Iowa, 1984; 1991.
- Collins, K. K.**, Associate Professor and *Director of Graduate Studies*, Ph.D., Vanderbilt University, 1976; 1976.
- Cruz, Ricardo C.**, Assistant Professor, M.S., Illinois State University, 1991; 1993.
- Dively, Ronda**, Assistant Professor, D.A., Illinois State University, 1994; 1994.
- Donow, Herbert S.**, Professor, *Emeritus*, Ph.D., University of Iowa, 1966; 1966.
- Fanning, Charles F.**, Professor, Ph.D., University of Pennsylvania, 1972; 1993.
- Fox, Robert Elliot**, Associate Professor, Ph.D., SUNY at Buffalo 1976; 1991.
- Friend, Jewell**, Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1970; 1967.
- Geyh, Paula**, Assistant Professor, Ph.D., University of Pennsylvania, 1994; 1995.
- Goodin, George V.**, Associate Professor, Ph.D., University of Illinois, 1962; 1966.
- Griffin, Robert P.**, Associate Professor, *Emeritus*, Ph.D., University of Connecticut, 1965; 1965.
- Haruf, Kent A.**, Associate Professor M.F.A., Iowa University, 1973; 1991.
- Hatton, Thomas J.**, Associate Professor, Ph.D., University of Nebraska, 1966; 1965.
- Hawes, Clement**, Assistant Professor, Ph.D., Yale University, 1986; 1990.
- Hillegas, Mark**, Professor, *Emeritus*, Ph.D., Columbia University, 1957; 1965.
- Howell, John M.**, Professor and *Chair*, Ph.D., Tulane University, 1963; 1963.
- Humphries, Michael L.**, Assistant Professor, Ph.D., The Claremont Graduate School, 1990; 1991.
- Hurley, Paul J.**, Professor, *Emeritus*, Ph.D., Duke University, 1962; 1965.
- Jones, Rodney G.**, Professor, M.F.A., University of North Carolina at Greensboro, 1973; 1984.
- Joseph, Allison**, Assistant Professor, M.F.A., Indiana University, 1992; 1994.
- Klaver, Elizabeth T.** Assistant Professor, Ph.D., University of California at Riverside, 1990; 1991.
- Knopp, Lisa**, Assistant Professor, Ph.D., University of Nebraska, 1993; 1995.
- Krappe, Edith S.**, Associate Professor, *Emerita*, Ph.D., University of Pennsylvania, 1953; 1929.
- Kvernes, David M.**, Assistant Professor, *Emeritus*, Ph.D., University of Minnesota, 1967; 1968.
- Lamb, Mary A.**, Professor, Ph.D., Columbia University, 1975; 1975.
- Lang, Susan**, Assistant Professor, Ph.D., Emory University, 1992; 1995.
- Lawson, Richard A.**, Professor, *Emeritus*, Ph.D., Tulane University, 1966; 1963.
- Light, James F.**, Professor, *Emeritus*, Ph.D., Syracuse University, 1953; 1979.
- Little, Judy R.**, Professor, Ph.D., University of Nebraska, 1969; 1969.
- Lordan, E. Beth**, Assistant Professor, M.F.A., Cornell University, 1987; 1991.
- McClure, Lisa J.**, Associate Professor, D.A., University of Michigan, 1988; 1988.
- McEathron, Scott J.**, Assistant Professor, Ph.D., Duke University, 1993; 1993.
- Morey, Ann-Janine**, Professor, Ph.D., University of Southern California, 1979; 1989.
- Moss, Sidney P.**, Professor, *Emeritus*, Ph.D., University of Illinois, 1954; 1964.
- Nelms, Ralph G.**, Assistant Professor, Ph.D., Ohio State University, 1990; 1990.
- Partlow, Robert B., Jr.**, Professor, *Emeritus*, Ph.D., Harvard University, 1955; 1957.
- Perillo, Lucia Maria**, Associate Professor, M.A., Syracuse University, 1986; 1991.
- Person, Leland S., Jr.**, Professor, Ph.D., University of Indiana, 1977; 1987.
- Peterson, Richard F.**, Professor, Ph.D., Kent State University, 1969; 1969.
- Piper, Henry Dan**, Professor, *Emeritus*, Ph.D., University of Pennsylvania, 1950; 1962.
- Rainbow, R.S.**, Associate Professor, *Emeritus*, Ph.D., University of Chicago, 1959; 1949.
- Riedinger, Anita R.**, Associate Professor, Ph.D., New York University, 1985; 1989.
- Rudnick, Hans H.**, Professor, Ph.D., University of Freiburg, Germany, 1966; 1966.
- Schönhorn, Manuel R.**, Professor, Ph.D., University of Pennsylvania, 1963; 1968.
- Simeone, William E.**, Professor, *Emeritus*, Ph.D., University of Pennsylvania, 1950; 1950.
- Stibitz, E. Earle**, Professor, *Emeritus*, Ph.D., University of Michigan, 1951; 1952.
- Vieth, David Muench**, Professor, *Emeritus*, Ph.D., Yale University, 1953; 1965.
- Webb, Howard W., Jr.**, Professor, *Emeritus*, Ph.D., University of Iowa, 1953; 1956.
- Williams, Tony**, Associate Professor, Ph.D., University of Manchester, 1973; 1984.
- Zimra, Clarisse**, Associate Professor, Ph.D., University of Washington, 1974; 1988.

The Department of English offers programs leading to the Master of Arts and the Doctor of Philosophy degrees with a major in English. Students enrolled in a

program leading to the Master of Science in Education degree in secondary education or higher education may take courses in English to satisfy requirements for the teaching specialty. Students enrolled in the Ph.D. degree in education program may take courses in English for the elective portion of the program when permitted by the specific department participating in the degree.

Admission

Students seeking admission to the graduate program in English must first be admitted by the Graduate School before they can be admitted to the Department of English.

Students seeking admission to the M.A. degree program are strongly advised to take the verbal and advanced section of the Graduate Record Examination, especially those students wishing to compete for fellowship support. Those seeking unconditional admission to the Doctor of Philosophy degree program must present a score of the 70th percentile or above in the advanced section of the Graduate Record Examination.

Information about admission and the necessary admission forms to the graduate programs in English may be obtained by calling (618-453-5321) or by writing: Director of Graduate Studies, Department of English, Southern Illinois University at Carbondale, Carbondale, IL 62901-4503.

Transfer Credit

Within limits imposed by the Graduate School, transfer credits will be accepted by the Department of English subject to the following restrictions.

The student must petition the director of graduate studies giving the following information: the number and level of hours being submitted for credit, where and when the work was done, the grade received, and course descriptions and syllabi. As nearly as possible, the course to be transferred should be equated with a course offered by the SIUC Department of English. An appropriate faculty member will recommend whether the transfer credits should be accepted and whether the course satisfies the course distribution requirements of the department. The director of graduate studies will forward a recommendation to the proper authorities.

Retention

In the entire graduate program, the student may accumulate up to 3 hours of work below *B*, so long as a 3.0 M.A. or 3.25 Ph.D. average is maintained. If the student has accumulated more than 3 hours, but fewer than 10 hours, of grades below *B*, these must be replaced by an equal number of hours of *A* or *B* in addition to maintaining the required average. That is, the minimum number of semester hours of course work may be increased from 30 to a maximum of 36. A student who accumulates more than 9 hours of *C* will be dropped from the program.

A student who is granted a deferred or incomplete grade must complete the work by the end of the next term in residence. Exception to this rule will be made only in a very special case and must be made through petition to the graduate studies committee. A student who has accumulated more than 6 hours of such work will not be allowed to register for more course work until the total of deferred work is reduced to not more than 3 semester hours. Deferred or incomplete work will be regarded as finished when a student has submitted all examinations, papers, etc., to the instructor. Deferred or incomplete grades in ENG 595, 600, and 601 are not included in the above regulations.

Course Work

Students may offer work from outside the department (in a single field or in two or more related fields) toward either the Master of Arts or the Ph.D. degree pro-

vided that the work does not interfere with regular requirements of the Department of English and has relevance to their program.

Master of Arts Degree

The Master of Arts degree major in English requires satisfactory completion of 30 semester hours, of which 15 must be earned in 500-level courses at Southern Illinois University at Carbondale. M.A. students may elect to focus their study either on a literature concentration or on the study of literature combined with a concentration in either composition or creative writing.

All students must satisfy the following requirements:

1. Core courses.

English 502 — 3 hours

Four literature courses:

two from Group I, representing two different historical periods; and
two from Group II, representing two different historical periods — 12
hours

Group I:

- (a) Anglo-Saxon and Medieval English literature
- (b) Renaissance and 17th Century English literature
- (c) Restoration and 18th Century English literature
- (d) 19th Century English literature

Group II:

- (a) American literature before 1900
- (b) American literature since 1900
- (c) Modern British literature
- (d) Modern Continental literature

2. *Concentrations*. Satisfactorily complete one of the concentrations detailed below.
3. *Foreign Language*. This requirement may be satisfied by completing, with an average not less than *B*, two years of college-level work in one foreign language or FL 488, a research-tool course, or ENGL 402 plus ENGL 506 (*Beowulf*), or the equivalent. Equivalent work will be judged on an ad-hoc basis by the director of graduate studies. Otherwise the requirement must be satisfied by passing the ETS examination.
4. *Research paper/thesis*. This requirement may be satisfied either by submitting to the director of graduate studies two copies of a research paper which has received a grade of not less than *B* in a 500-level English course (a composition course for students in that concentration), or by taking English 599 (3 hours) and writing an acceptable thesis.
5. *Final examination*. This requirement must be satisfied as specified below.

Literature Concentration

English 401 or 402 or 403 — 3 hours

Two additional literature courses so that a student has covered three periods in Group I and three periods in Group II — 6 hours

Electives should include a literary criticism/theory course and may include English 599 — 6 hours

Satisfactory completion of a written examination over six historical periods and a reading list. If a student writes a thesis, the examination is oral over the thesis and course work.

Composition Concentration

English 401 — 3 hours

English 501 — 3 hours

English 581 — 3–9 hours (English 581 may be taken two or three times so long as the topic differs from one matriculation to the other. The additional 3 or

6 hours may, with the permission of the director of graduate studies, substitute for 3 or 6 hours of the other course requirements in the composition concentration.)

Either English 490 or 491 — 3 hours

One of the following:

English 403, English 596, or Speech 440 — 3 hours

Satisfactory completion of a written examination over the literature and composition course work and a reading list. If a student writes a thesis, the examination is oral over the thesis and the course work. (Students choosing to write a thesis may substitute English 599 for one of the courses in the composition concentration.) — 3 hours

Creative Writing Concentration

English 592 — 3-9 hours (English 592 may be repeated so long as the topic differs from one matriculation to the other.)

English 594 — 3 hours

English 599 — 3 hours

Satisfactory completion of an oral examination over the thesis and the course work.

Doctor of Philosophy Degree

Students must apply formally for admission to the Doctor of Philosophy degree program, including students who have earned a master's degree at SIUC. Admission to the Ph.D. program is decided by the graduate studies committee, which makes its decision according to the following criteria:

1. An M.A. degree in English or its equivalent
2. Appropriate grade-point average (normally, a 3.25 is the acceptable minimum)
3. A satisfactory score on the GRE advanced literature examination (normally the 70th percentile will constitute an acceptable minimum score)

A full-time student holding a master's degree can complete the doctoral program in two years, though most prefer three. Students are considered Ph.D. candidates when they have (1) completed the prescribed course of study, (2) satisfied the research-tool requirements, (3) passed the preliminary examination, and (4) been recommended by the English graduate faculty. The Graduate School recognizes students as Ph.D. candidates after it receives notification that the students have passed the preliminary examinations. Students must be admitted to candidacy at least 6 months prior to the final examination on the dissertation.

Accelerated Entry into the Ph.D. Degree Program

A student enrolled in the M.A. degree program may petition the graduate director after 2 semesters in residence for waiver of the requirement of the M.A. degree as prerequisite for admission to the doctoral program and for direct entry into the Ph.D. in accordance with the following conditions. First, the student must be an exceptional graduate student whose outstanding academic achievements must be supported by a wide range of conclusive evidence including, but not restricted to, the G.P.A., G.R.E. scores, M.A. degree research tool requirement, and evaluative letters from graduate instructors. Second, the student must present one graduate research paper of outstanding quality, or a published article of appropriate quality, or the equivalent for the departmental files. The petition shall be presented to the graduate studies committee for approval. If accelerated entry is granted, the student will proceed toward the Ph.D. degree in accordance with the established rules of the department and the Graduate School. Students admitted into the Ph.D. program under the accelerated entry

option will have to fulfill all M.A. degree requirements as part of the Ph.D. degree work, but will not receive the M.A. degree.

Course of Study

There is no prescribed number of hours for the Ph.D. degree in English. Required courses are as follows:

1. If students have never had courses, graduate or undergraduate, in Chaucer, Shakespeare, and Milton, they are required to remedy this deficiency;
2. Students are required to have taken at least one graduate course in 6 major fields (see M.A. course requirements) and ENG 401 and either ENGL 402 or 403 or the equivalents, and a literary criticism or theory course.
3. In addition, courses may be prescribed by the students' advisory committee to insure that they will have a comprehensive knowledge of a major and 2 related minor areas;
4. Ph.D. students are normally required to complete for credit, with no grade lower than *B*, at least one 500-level course in each minor area of study.

Research Tool Requirements

A student may satisfy the research tool requirement by fulfilling 1 of the 3 options listed below. The choice of option and languages selected must be approved by the student's advisory committee.

1. A reading knowledge, demonstrated by examination, of 2 languages in addition to English. Each must be a language in which there is a substantial literature for research and which is germane to the student's field. Foreign students may specify their native language as one of the foreign languages, provided it is one which meets the above requirements. Foreign students choosing this option will be required to demonstrate fluency in oral and written English.
2. A command of one foreign language and its literature demonstrated by examination or by at least 3 courses numbered 400 or above, or the equivalent, with an average grade not lower than 3.0. Satisfaction of this requirement normally requires the equivalent of 3 years of study at the college level with grades of *B* or better. Foreign students may use their native languages provided those languages are appropriate to the particular fields of major emphasis. Foreign students choosing this option will be required to demonstrate fluency in oral and written English.
3. A reading knowledge of a single foreign language, demonstrated by examination, and a special research technique, completion of ENGL 402 and 506 (*Beowulf*), or a collateral field of knowledge. A special research technique should represent the acquisition of any special skill that will effectively contribute to the research proficiency of the student (provided that such a skill is not an assumed or traditional part of the major). The collateral field of knowledge is expected to broaden the student's scholarly background by permitting exploration of knowledge in a field related to the major.

To satisfy the research technique or collateral field requirement the student may complete a total of 2 semester courses numbered 400 or above, with an average grade not lower than 3.0.

The department has expanded its Ph.D. program into interdisciplinary studies on a cooperative basis with departments that deal with one pertinent subject matter and which are interested in such interdisciplinary cooperation, e.g., the Departments of Philosophy, Foreign Languages and Literatures, History, Cinema and Photography, Speech, Theater, Sociology, etc. Permission for an interdisciplinary minor must be approved by the student's committee and the graduate studies committee.

Preliminary Examinations. Students on a fellowship or a graduate assistantship will be expected to take preliminary examinations no later than 2 or 3 years, respectively, after receipt of their M.A. degree.

Preliminary examinations covering 3 areas are prepared and graded by the student's advisory committee. A major area examination consists of one 6 hour written exam, the minor areas of two 3 hour written exams. Preliminary examinations will be scheduled only twice in a single term.

At the discretion of the committee, a 2 hour oral examination may follow the decision on the written examinations.

Courses (ENGL)

Students desiring to enroll in 400- or 500-level courses must have been admitted to the M.A. or Ph.D. degree program in English or must have permission of the director of graduate studies in English.

401-3 Modern English Grammars. Survey of the structure of English, with emphasis on phonetics and phonology, morphology, syntax, semantics, pragmatics, grammar instruction, stylistics and language variation. Specifically designed to meet the needs of prospective teachers of composition and language arts at the secondary and college levels. Prerequisite: enrollment in English degree program or consent of department.

402-3 Old English Language and Literature. Introduction to the language, literature and culture of Anglo-Saxon England, with emphasis on Old English heroic and elegaic poetry, exclusive of *Beowulf*. Prerequisite: enrollment in English degree program or consent of department.

403-3 History of the English Language. The development of the language from its Indo-European roots through Early Modern English and selected American dialects. Emphasis on the geographical, historical and cultural causes of linguistic change. Prerequisite: enrollment in English degree program or consent of department.

404-3 Middle English Literature Excluding Chaucer. Selected writing from A.D. 1200-1500 with emphasis on the High Middle Ages. Readings include such works as *The Owl and the Nightingale*, *Piers Plowman*, *Pearl*, *Sir Gawain and the Green Knight*, selections from Arthurian legend, and medieval drama, lyric and ballad. Prerequisite: enrollment in English degree program or consent of department.

405-3 Middle English Literature: Chaucer. Major works, including *Troilus and Criseyde* and selections from *The Canterbury Tales*. Prerequisite: enrollment in English degree program or consent of department.

412-3 English Non-Dramatic Literature: The Renaissance. Topic varies, but usually lyric poets, especially 17th-century metaphysical poets such as Donne, Herbert and Marvell. Prerequisite: enrollment in English degree program or consent of department.

413-3 English Non-Dramatic Literature: The Restoration and Earlier Eighteenth Century. Major works of Dryden, Pope and Swift, and the non-dramatic specials of Behn, Addison and Steele. Prerequisite: enrollment in English degree program or consent of department.

414-3 English Non-Dramatic Literature: The Later Eighteenth Century. Major poets from Thomson to Blake, and major prose writers, with emphasis on Johnson, Boswell and their circle.

Prerequisite: enrollment in English degree program or consent of department.

421-3 English Romantic Literature. Wordsworth, Coleridge, Byron, Shelley, Keats and other writers of the era. Prerequisite: enrollment in English degree program or consent of department.

422-3 Victorian Poetry. Tennyson, Browning, Arnold, and other poets in England. Prerequisite: enrollment in English degree program or consent of department.

423-3 Modern British Poetry. Major modernists: Yeats, Eliot, Pound; with selected works of Auden, Owen, Thomas, Heaney and others. Prerequisite: enrollment in English degree program or consent of department.

425-3 Modern Continental Poetry. Representative poems by major 20th century poets of France, Italy, Germany, Spain, Russia, and Greece. Prerequisite: enrollment in English graduate degree program or consent of department.

426-3 American Poetry to 1900. Trends and techniques in American poetry to 1900. Prerequisite: enrollment in English degree program or consent of department.

427-3 American Poetry from 1900 to the Present. The more important poets since 1900.

433-3 Religion and Literature. Introduces students to the study of religious meaning as it is found in literature. Prerequisite: enrollment in English degree program or consent of department.

436-3 Major American Writers. Significant writers from the Puritans to the present. May be repeated only if topic varies and with consent of the department. Prerequisite: enrollment in English degree program or consent of department.

437-3 American Literature to 1800. Representative works and authors from the period of exploration and settlement to the Federal period. Prerequisite: enrollment in English degree program or consent of department.

445-3 Cultural Backgrounds of Western Literature. A study of ancient Greek and Roman literature, Dante's *Divine Comedy*, and Goethe's *Faust*, as to literary type and historical influence on later Western writers. Prerequisite: enrollment in English graduate degree program or consent of department.

446-3 Caribbean Literature. Representative texts from drama, poetry and fiction that have shaped black diaspora aesthetics in the Caribbean, with special reference to black literature of

the North American continent. Prerequisite: enrollment in English graduate degree program or consent of department.

451-3 Eighteenth Century English Fiction. The novel from Defoe to Jane Austen, including works by Fielding, Richardson and others. Prerequisite: enrollment in English degree program or consent of department.

452-3 Nineteenth Century English Fiction. The Victorian novel from 1830, including works by the Brontës, Dickens, George Eliot, Thackeray and others. Prerequisite: enrollment in English degree program or consent of the department.

453-3 Modern British Fiction. Major writers (including Conrad, Joyce, Woolf, and Lawrence) with selected fiction from mid-century and later. Prerequisite: enrollment in English degree program or consent of department.

455-3 Modern Continental Fiction. Selected major works of European authors such as Mann, Silone, Camus, Kafka, Malraux, Hesse. Prerequisite: enrollment in English graduate degree program or consent of department.

458-3 American Fiction to 1900. Trends and techniques in the American novel and short story. Prerequisite: enrollment in English degree program or consent of department.

459A-3 American Prose from 1900 to Mid-century: The Modern Age. Representative narratives from the turn of the century to the post-World War II period. Prerequisite: enrollment in English degree program or consent of the department.

459B-3 American Prose from Mid-century to the Present: The Postmodern Age. Representative narratives from the post-World War II period to the present. Prerequisite: enrollment in English degree program or consent of department.

460-3 Elizabethan and Jacobean Drama. Elizabethan drama excluding Shakespeare: such Elizabethan playwrights as Greene, Peele, Marlowe, Heywood, Dekker; and Jacobean drama: such Jacobean and Caroline playwrights as Jonson, Webster, Marston, Middleton, Beaumont and Fletcher, Massinger, Ford, Shirley. Prerequisite: enrollment in English graduate degree program or consent of department.

462-3 English Restoration and 18th Century Drama. After 1660, representative types of plays from Dryden to Sheridan. Prerequisite: enrollment in English graduate degree program or consent of department.

464-3 Modern British Drama. Major writers (including Shaw and Synge), with selected works of later dramatists such as Churchill and Bond. Prerequisite: enrollment in English degree program or consent of department.

465-3 Modern Continental Drama. The continental drama of Europe since 1870; representative plays of Scandinavia, Russia, Germany, France, Italy, Spain and Portugal. Prerequisite: enrollment in English graduate degree program or consent of department.

468-3 American Drama. The rise of drama, with emphasis on the 20th century. Prerequisite: enrollment in English degree program or consent of department.

471-3 Shakespeare: The Early Plays, Histories, and Comedies. Such plays as *A Midsum-*

mer Night's Dream, *The Merchant of Venice*, *The Taming of the Shrew*, *Henry IV Part I*, *Henry V*, and *Much Ado about Nothing*. Prerequisite: enrollment in English degree program or consent of department.

472-3 Shakespeare: The Major Tragedies, Dark Comedies and Romances. Such plays as *Hamlet*, *Macbeth*, *Othello*, *King Lear*, *Measure for Measure*, *The Winter's Tale* and *The Tempest*. Prerequisite: enrollment in English degree program or consent of department.

473-3 Milton. A reading of a selection of the minor poems, of *Paradise Lost*, *Paradise Regained*, *Samson Agonistes*, and the major treatises. Prerequisite: enrollment in English graduate degree program or consent of department.

481-3 Young Adult Literature in a Multicultural Society. Introduction to the evaluation of literary materials for junior and senior high school, with emphasis on critical approaches and the multicultural features of schools and society. Prerequisite: enrollment in English degree program or consent of department.

485-3 Problems in Teaching Composition, Language, Literature and Reading in High School. Prerequisite: enrollment in English graduate degree program or consent of department

490-3 Expository Writing. Advanced composition with emphasis on a variety of rhetorical strategies. Prerequisite: English 290, 390, or equivalent, enrollment in English graduate degree program, or consent of department.

491-3 Technical Writing. Introduction to technical communication; open to entire university community. Training also provided for students interested in teaching technical writing. Prerequisite: English 290, 291, 390, 391, or equivalent.

492-3 to 9 Creative Writing Seminar. Topic varies among the writing of poetry, fiction or literary nonfiction prose. A directed written project will be submitted at the end of the semester in fiction, poetry or literary nonfiction prose. A collection of short stories or poems, a novel or nonfiction work of what instructors consider to be acceptable quality will fulfill the seminar requirement. Prerequisite: consent of instructor.

493-3 to 9 (3 per topic) Special Topics in Literature and Language. Topics vary and are announced in advance; both students and faculty suggest ideas. May be repeated as the topic varies. Prerequisite: enrollment in English degree program or consent of department.

494-3 Literary Theory Applied to Film. Introduction to contemporary literary theory with emphasis on the literary features of cinema and their interpretation. A \$10 screening fee is required. Prerequisite: enrollment in English degree program or consent of department.

495-3 A Survey of Literary Criticism. Introduction to the history of criticism and major recent schools of literary criticism and theory. Prerequisite: enrollment in English degree program or consent of department.

498-3 to 9 Internships. For English majors only. Student may take up to nine semester hours to receive credit for internships with SIU Press, Special Collections, University Museum, Coal Center and other academic units. Prerequisite: written approval from department and academic unit.

499-1 to 6 (1 to 3, 1 to 3) Readings in Literature and Language. For English majors only. Prior written departmental approval required. May be repeated as the topic varies, up to the maximum of six semester hours. Prerequisite: enrollment in English graduate degree program or consent of department.

501-3 Research in Composition. Seminar in qualitative and quantitative research methods in composition and its teaching. Prerequisite: enrollment in English graduate degree program or consent of department.

502-3 Introduction to Graduate Study and Teaching College Composition. An introduction to research methods and materials which includes a survey of critical approaches to the study of English and American literature, combined with an introduction to methods and materials related to the teaching of basic compositional skills on the college level. This course is required of all graduate assistants who have no previous college teaching experience or no familiarity with basic research techniques. Prerequisite: enrollment in English graduate degree program or consent of department.

506-3 to 12 Anglo-Saxon and Medieval Studies. Seminars on various topics from Old and Middle English literature. May be repeated only with different topics and the consent of the department. Prerequisite: enrollment in English graduate degree program or consent of department.

510-3 to 12 Renaissance Studies. Seminars in varying topics concerned with the literature of the 16th and 17th centuries and the drama of Shakespeare. May be repeated only with different topics and the consent of the department. Prerequisite: enrollment in English graduate degree program or consent of department.

516-3 to 12 Restoration and 18th Century Studies. Seminars in varying topics concerning the literature of the period. May be repeated only with different topics and the consent of the department. Prerequisite: enrollment in English graduate degree program or consent of department.

530-3 to 12 19th Century English Literature. Seminars in various topics concerning the literature of the Romantic and Victorian periods. May be repeated only with different topics and the consent of the department.

533-3 to 12 American Literature Before 1900. Seminars in varying topics. May be repeated only with different topics and the consent of the department. Prerequisite: enrollment in English graduate degree program or consent of department.

539-3 to 12 American Literature After 1900. Seminars in varying topics. May be repeated only with different topics and the consent of the department. Prerequisite: enrollment in English graduate degree program or consent of department.

550-3 to 12 Modern British Literature. Seminars in varying topics concerning Modern British literature. May be repeated only with different topics and the consent of the department. Prerequisite: enrollment in English graduate degree program or consent of department.

579-3 to 12 (3 per topic) Studies in Modern Literature. May be repeated only if the topic varies, and with consent of department. Prerequisite: enrollment in English graduate degree program or consent of department.

581-3 to 9 (3 per topic) Problems in Teaching English. May be repeated only if the topic varies, and with consent of department. Prerequisite: enrollment in English graduate degree program or consent of department.

589-3 to 12 Readings in Literature and Language. For English graduate students only. Prior written departmental approval required. May be repeated as the topic varies. Prerequisite: enrollment in English graduate degree program or consent of department.

591-3 to 9 Seminar in Literary Nonfiction. Critical reading and analysis of one of the major forms of literary nonfiction (biography, autobiography, popular science, the essay, literary journalism, and travel narratives). May be repeated only with different topics and the consent of the department. Prerequisite: enrollment in English graduate degree program or consent of department.

592-3 to 9 Creative Writing Seminar. Advanced workshops offered in both fiction and poetry. Class content derives primarily from student's work. Genre announced in advance. Prerequisite: enrollment in English graduate degree program or consent of department.

593-3 to 12 Special Topics. Seminars in varying topics concerning language and literature. May be repeated only with different topics and the consent of the department. Prerequisite: enrollment in English graduate degree program or consent of department.

594-3 Contemporary Literature Seminar. Advanced seminars offered in both contemporary poetry and contemporary fiction. Taught by creative writers and designed for students concentrating in creative writing. Prerequisite: enrollment in English graduate degree program or consent of department.

595-1 to 9 Independent Readings. Preparatory for preliminary examinations for doctoral students in English. May be taken once only, grade of S/U, according to the result of the preliminary examination. Prerequisite: twenty-four classroom credit hours beyond the M.A., exclusive of audits and readings, and enrollment in English graduate degree program or consent of department.

596-3 to 12 Language Studies. Seminars in varying topics concerning rhetoric, grammar and literacy. May be repeated only with different topics and the consent of the department. Prerequisite: enrollment in English graduate degree program or consent of department.

597-3 Composition Theory. Historical and analytical approaches to theories of discourse, theories of composing and theories of pedagogy. Prerequisite: 502 or equivalent and enrollment in graduate degree program or consent of department.

598-3 to 12 Studies in Issues of Literary Theory. Seminars on various issues literary theory. May be repeated only with different topics and the consent of the department, enrollment in English graduate degree program or consent of department.

599-3 Thesis. For Masters' students who elect to write a thesis in lieu of one three hour graduate course. Prerequisite: successful completion of 15 hours of graduate work on the master's degree and consent of the thesis director.

600-1 to 36 (1 to 16 per semester) Dissertation.

601-1 per semester Continuing Enrollment. For those graduate students who have not fin-

ished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Finance

(See Business Administration.)

Food and Nutrition

(See Animal Science for program description.)

Foreign Languages and Literatures

E-mail: DFLL@siu.edu

COLLEGE OF LIBERAL ARTS

Bender, Lionel, Professor, Ph.D., University of Texas at Austin, 1968; 1971.

Betz, Frederick, Professor, Ph.D., Indiana University, 1973; 1978.

Bork, Albert W., Professor, *Emeritus*, Doctor en Letras, National University of Mexico, 1944; 1958.

Cáceres, Alejandro, Assistant Professor, Ph.D., Indiana University, 1992; 1994.

Davis, J. Cary, Professor, *Emeritus*, Ph.D., University of Chicago, 1936; 1930.

Edwards, Robert W., Assistant Professor, Ph.D., University of Texas, 1988; 1990.

Gobert, David L., Professor, Ph.D., University of Iowa, 1960; 1965.

Hammond, Charles E., Associate Professor, Ph.D., Columbia University, 1986; 1987.

Hartman, Steven Lee, Associate Professor, Ph.D., University of Wisconsin, 1971; 1971.

Hartwig, Hellmut A., Professor, *Emeritus*, Ph.D., University of Illinois, 1943; 1948.

Keller, Thomas, Associate Professor and *Chair*, Ph.D., University of Colorado, 1975; 1975.

Kilker, James, Professor, *Emeritus*, Ph.D., University of Missouri-Columbia, 1961; 1967.

Kim, Alan, Associate Professor, Ph.D., University of Southern California, 1985; 1988.

Liedloff, Helmut, Professor, *Emeritus*, Ph.D., Phillips University, Germany, 1956; 1959.

Lowe-Dupas, Hélène, Assistant Professor, Ph.D., Ohio State University, 1993; 1994.

Meinhardt, Warren, Associate Professor, Ph.D., University of California, Berkeley, 1965; 1969.

O'Brien, Joan, Professor, Ph.D., Fordham University, 1961; 1969.

O'Bryhim, Shawn, Associate Professor, Ph.D., University of Texas at Austin, 1991; 1996.

Orechwa, Olga, Associate Professor, *Emerita*, Ph.D., Universitas Ucrainiensis Libera, Munich, Germany, 1967; 1970.

Sanjabi, Maryam, Assistant Professor, University of Paris-Sorbonne, 1992; 1989.

Speck, Charles, Assistant Professor, Laurea in Diritto Canonico, Pontifical Lateran University, Italy, 1963; 1970.

Thibeault, Thomas, Assistant Professor, Universität Salzburg, 1989; 1989.

Timpe, Eugene F., Professor, Ph.D., University of Southern California, 1960; 1972.

Ulner, Arnold R., Assistant Professor, Ph.D., University of Missouri, 1972; 1970.

Williams, Frederick, Associate Professor, Ph.D., Cornell, 1976; 1977.

Winston-Allen, C. Anne, Assistant Professor, Ph.D., University of Kansas, 1979; 1991.

Winters, Margaret, Professor, Ph.D., University of Pennsylvania, 1975; 1977.

Woodbridge, Hensley, Professor, *Emeritus*, Ph.D., University of Illinois, 1950; 1965.

The Department of Foreign Languages and Literatures offers graduate programs leading to the Master of Arts degree in foreign languages and literatures with concentrations in French or Spanish. A student whose degree program makes provision for a graduate minor may follow a program of study leading to a minor in these same subjects as well as in Russian.

Students may complete requirements for a teaching specialty in French, German, Russian, or Spanish for the Master of Science in Education degree majoring in secondary education or in higher education.

Students seeking the Master of Arts degree will be governed by the policies of the Graduate School with respect to admission, minimum credit hours, scholastic attainment, residence, and maximum time limits for completion of the program.

Admission

In addition to meeting requirements of the Graduate School, the applicant for admission to the programs in the Department of Foreign Languages and Literatures should hold a bachelor's degree with a major or at least 18 semester hours (27 quarter hours) of courses on the junior-senior level in French or Spanish. Students who meet requirements for admission to the Graduate School but do not meet departmental requirements may register as unclassified students for specific graduate courses in the department only with consent of the instructor and authorization from the head of their language section.

Requirements for Master of Arts

Students who have been admitted to graduate study will plan their course of study in periodic consultations with their graduate advisers. During such consultations, each student will decide upon either a thesis or a non-thesis (i.e., research paper) program. This program should be made before the end of the second semester of study. Students choosing to write a thesis will register for the thesis course (599), which provides from one to six semester hours of credit. Regardless of whether the thesis or non-thesis program is chosen, every candidate must pass a comprehensive written examination and a final oral examination at a time specified by the language section. For the student writing a thesis, this final oral examination is primarily a defense of the thesis.

A minimum of 30 semester hours are required, of which at least 15 must be in 500-level courses. All students must take FL 566-3, *Bibliography and Research Techniques*, which should be taken as early as possible during the course of studies; also required are the linguistics structure (411) or history (412) of the language concentration. FL 436-3, *Methods in Teaching Foreign Language*, is recommended for all teaching assistants and those who intend to make teaching their career. With approval of the adviser, graduate courses outside the language in which the degree is being taken may be counted towards the total unit requirement. Beyond such requirements as are specified for each language, students must demonstrate proficiency in a second foreign language by passing an exam in that language or by successfully completing approved course work in that language.

FRENCH

The program of study leading to the Master of Arts degree with a concentration in French is planned to give a balanced overview in the areas of French language, literature, and civilization, and to allow a high degree of flexibility in the elaboration of the student's total program in French. Required courses are:

FL 566 *Bibliography and Research Techniques*

FR 411-3 *Linguistic Structure of French*

or

FR 412-4 *History of the French Language*

FR 470-3 *Backgrounds of French Civilization*

FR 510-3 *Masterpieces of French Literature*

FR 525-3 *Advanced Language Skills*.

The student will consult with the graduate adviser in determining a suitable program beyond those requirements.

Thesis or Research Paper (option 1 or 2 is required).

Option 1. If writing a thesis either (a) 6 hours of FR 599 or (b) 3 hours of FR 599 plus 3 hours of an elective French graduate course.

Option 2. If writing a research paper either (a) 4 hours of elective French graduate course work, plus 2 hours of FL 506 or (b) 6 hours of elective French graduate course work.

SPANISH

The program of study leading to the Master of Arts degree with a major in Spanish is designed to survey at least 2 of the following: Hispanic linguistics, Peninsular literature, and Spanish American literature. Requirements are:

FL 566-3 Bibliography and Research Techniques

SPAN 411-3 Linguistic Structure of Spanish

or

SPAN 412-3 History of the Spanish Language

SPAN 410-3 Advanced Language Study.

The student will consult with the graduate adviser in determining a suitable program beyond those requirements.

Thesis or research paper (option 1 or 2 is required). SPAN 599 or (b) Option 1: If writing a thesis, either (a) 6 hours of 3 hours of SPAN 599 plus 3 hours of an elective Spanish graduate course. Option 2: If writing a research paper, either (a) 4 hours of elective Spanish graduate course work, plus 2 hours of FL 509 or (b) 6 hours of elective Spanish graduate course work.

Requirements for Master of Science in Education

The Master of Science in Education degree majoring in secondary education with a teaching emphasis in French, German, Russian, or Spanish requires a minimum of 30 hours, at least 13–17 semester hours in the subject matter area and 13–17 semester hours in secondary education. The Master of Science in Education degree major in higher education with a teaching emphasis in a foreign language requires at least 20 semester hours in the subject matter and 12 semester hours in higher education.

Further details as to specific requirements will be found in the respective program descriptions. For either degree, if the teaching emphasis is Russian, Russian 415 is required.

Courses (FL)

400-3 to 12 Variable Elementary Languages. Elementary conversational skills in a language not otherwise taught in this department. Since emphasis is on oral skills only, course does not fulfill any college or departmental language requirement. Language taught varies from year to year. Must be taken in **a, b** sequence.

436-3 Methods in Teaching Foreign Languages. Survey of general principles of second-language teaching, based upon insights of modern linguistics and learning-psychology. Followed by intensive practical work in classroom and language laboratory with teachers experienced in the student's specific language field. Required of prospective teachers of foreign languages in secondary schools. Prerequisite: concurrent or prior enrollment in 300-level course in French, German, Latin, Russian or Spanish.

506-1 to 4 Research Problems—French. Individual research on a literary or linguistic problem involving original investigation in areas not cov-

ered by seminars or thesis. Two hours may be used for a research paper for non-thesis programs.

507-1 to 4 Research Problems—German. Individual research on a literary or linguistic problem involving original investigation in areas not covered by seminars or thesis. Two hours may be used for a research paper for non-thesis programs.

508-1 to 4 Research Problems—Russian. Individual research on a literary or linguistic problem involving original investigation in areas not covered by seminars or thesis. Two hours may be used for a research paper for non-thesis programs.

509-1 to 4 Research Problems—Spanish. Individual research on a literary or linguistic problem involving original investigation in areas not covered by seminars or thesis. Two hours may be used for a research paper for non-thesis programs.

535-2 Critical Theory. Theories of literature and theories underlying literary criticism, taken logically rather than chronologically. Extensive reading, in the original language whenever possible, of both primary statements and exemplificative documents.

566-3 Bibliography and Research Techniques. Introduction to the use of the chief reference works in the humanities and social sciences as they pertain to foreign languages in general.

Chinese (CHIN)

No graduate program in Chinese is offered through the Eastern Languages and Civilization section. Four-hundred-level courses in this section may be taken for graduate credit unless otherwise indicated in the course description.

410-3 The Linguistic Structure of Chinese. (Same as Linguistics 411.) Phonology and syntax of Mandarin Chinese. Principal phonological features of major Chinese dialects. Special emphasis on the contrastive analysis between Mandarin Chinese and English. Theoretical implications of Chinese syntax for current linguistic theories. Prerequisite: one year of Chinese or Linguistics 401.

435-3 Business Chinese. An overview of China's business through reading in Chinese dealing with

Also, extensive work with bibliography and research methods in French, German, or Spanish.

568-2 Bibliography and Research Techniques—Russian. Bibliography and research methods in the target language and its culture. Introduction to the use of the chief reference works in the humanities and social sciences as they deal with areas in which the target language is spoken.

the major aspects of China's foreign trade ranging from broad principles and policies to concrete details of operation and procedure. Enhancement of conversational skills for business contexts. Prerequisite: 320 or equivalent.

490-1 to 6 Advanced Independent Study in Chinese. Directed individual study of some question, author, or theme of significance in the field of Chinese literature, language or culture. Prerequisite: consent of instructor.

Classics (CLAS)

No graduate program is offered through the classics section. Four-hundred-level courses in this section may be taken for graduate credit unless otherwise indicated in the course description.

Courses numbered 388 and 488 are designed to help graduate students prepare for proficiency examination required by certain departments as evidence of competency in Latin. No prerequisite is stipulated. Students must register for these courses and are advised to take them as part of, not in addition to, their graduate program. Students will not receive graduate credit for courses numbered below 400.

388-3 Latin as a Research Tool. Intensive study of Latin as basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor.

405-2 Greek Literature in Translation. (Same as Women's Studies 463.) Reading and analysis of selected classical Greek author(s), genre(s), theme(s), such as the role of woman, the social life of the ancient Greeks, etc. Students taking the course for graduate credit will do a critical study of one aspect. No knowledge of Greek or Latin is required.

406-2 Latin Literature in Translation. Reading and analysis of selected Roman author(s), genre(s), theme(s). Students taking the course for graduate credit will do a critical study of one aspect. No knowledge of Greek or Latin is required.

415-1 to 9 (1 to 3 per topic) Readings from Greek Authors in Greek. Reading and interpretation of works of Greek literature at an advanced level. Students taking the course for graduate credit will do a critical study of one aspect. This

course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: two semesters of 300-level Greek or consent of instructor.

416-1 to 9 (1 to 3 per topic) Readings from Latin Authors in Latin. Reading and interpretation of works of Latin literature at an advanced level. Students taking the course for graduate credit will do a critical study of one aspect. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: two semesters of 300-level Latin or consent of instructor.

488-3 Advanced Latin as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor. With consent of student's own department, and with a grade of B or A, satisfies graduate program requirements for foreign languages as research tool. Prerequisite: 388 or one year of Latin or equivalent.

French (FR)

Courses numbered 388 and 488 are designed to help graduate students prepare for proficiency examination required by certain departments as evidence of competency in French. No prerequisite stipulated. Students must register for these courses and are advised to take them as part of, not in addition to, their graduate program. Students will not receive graduate credit for courses numbered below 400.

388-3 French as a Research Tool. Intensive study of Latin as basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor.

410-3 Advanced Language Study. Designed to improve language skills beyond the level of 320. Selected grammar review and intensive practice in effective use of the written and spoken language through translations and free compositions. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite 320b.

411-3 Linguistic Structure of French. (Same as Linguistics 413.) Study of the phonology, morphology, and syntax of modern spoken and written French, stressing interference areas for English speakers in learning French. Prerequisite: 320b and 321 or equivalent.

412-4 History of the French Language. A survey of the phonological and morphological changes from Latin through Vulgar Latin and Old French to Modern French; study of an original Old French text, such as the *Chanson de Roland* or a romance of Chretien de Troyes. Knowledge of Latin not required.

414-3 Translation Techniques. Practice in oral translation — simultaneous and subsequent; written translation practice, from and into French, of materials from sources varying from technical, commercial, political, to general interest. Advanced grammar and syntax review as they relate to translation, with practice through exercises and translation. Prerequisite: 320a or equivalent.

415-3 Literary Stylistics. A study of the aesthetics and theory of French Literary expression. Disciplined stylistic analyses of excerpts from representative works of great French authors. Appreciation of distinctive qualities of each writer's genius. Consideration is given to various stylistic methods.

419-3 Romance Philology. (Same as Spanish 419.) Historical and comparative study of the major Romance languages: their phonology, morphology, and syntax.

420-3 Medieval and Renaissance Literature. Study of the origins of French literature emphasizing the *Chanson de Roland*, *Tristan*, other courtly romances, and the lyric poetry of Villon, culminating with an examination of the development of the humanistic ideas and ideals of the French Renaissance.

430-4 Baroque and Classicism. An in-depth examination of artistic and social writings of baroque and classical literary figures such as Corneille, Racine, Moliere, La Fontaine, Descartes, Pascal, Mme de LaFayette, La Bruyere,

and La Rochefoucauld. Discussion, reports, papers.

435-3 Business French II. Detailed treatment of postal facilities and services, types of banks and their operations, transport of goods, import-export, bills of exchange, billing and shipping, insurance, accounting and the stock market. These topics will be the subject of translations and of commercial correspondence. Prerequisite: 320a or equivalent, may be taken independently of 335.

440-3 Literature of the Enlightenment. Study and discussion of the novel, theater, and philosophic writing of 18th century France as literature and as expressions of the Enlightenment. Major attention given to Montesquieu, Voltaire, Diderot, and Rousseau.

450-4 Literary Movements of the 19th Century. Romanticism, Realism, and Naturalism in the novel and theater followed by an examination of the reaction to these movements and of the influence of symbolism.

460-4 Studies in Literature of the 20th Century. Examination of the major themes, forms, techniques, and style of novelists from Gide and Proust to Robbe-Grillet and dramatists from Giraudoux to Ionesco and Beckett.

470-4 French Culture and Civilization. Study of contemporary France: values, attitudes, beliefs, and instructions. French civilization (history, literature, and the arts) will be treated mainly as a means of better understanding present day France. Offered in French. Prerequisite: 320a or permission of instructor.

475-3 to 6 Travel-Study in France. Travel-study project, planned under supervision of French faculty and carried out in France. Amount of credit depending on scope of study. Prerequisite: 320a or equivalent.

476-3 to 6 (3, 3) French Civilization Outside of France. Encompasses a number of individual courses, each of which focuses on one of the many areas of the world in which France has played a significant role. Manifestations of French culture and civilization, past and present, are studied and evaluated within the framework of an evolving local and global historic context.

488-3 Advanced French as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of B or A, satisfies graduate program requirement for foreign languages as research tool. Prerequisite: 388 or one year of French, or equivalent.

490-1 to 6 Advanced Independent Study in French. Individual exploration of some question, author, or theme of significance within the field of French literature, language or culture. Prerequisite: 320a, 321 and consent of instructor.

501-2 to 6 Studies on a Selected Topic or Author. Intensive study of one author or topic.

510-3 Masterpieces of French Literature. Appreciation and analysis of selected masterpieces in French literature with special attention given to required authors and works from the Master of Arts reading list.

520-1 to 3 Literature of the Middle Ages and Renaissance. A study of selected authors, literary movements, and expressions of the political realities and the philosophical currents of the Middle Ages and Renaissance.

525-3 Descriptive Stylistics. Consideration of levels of linguistic expression in contemporary French through the study of theoretical works and representative texts. Practice in composition and translation.

536-1 Teaching French at the College Level. Prepares graduate students in French for teaching at the college level. Required of all teaching assistants in French. May not be counted to satisfy secondary certification requirements.

German (GER)

The course numbered 488 is designed to help graduate students prepare for proficiency examination required by certain departments as evidence of competency in German. No prerequisite stipulated. Students register for this course are advised to take it as part of, not in addition to, their graduate program.

410-3 Advanced Language Study. Designed to improve language skills beyond the level of 320. Selected grammar review and intensive practice in effective use of written and spoken language through translations and free compositions. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: 320b or equivalent.

411-3 Linguistic Structure of Modern German. (Same as Linguistics 409) The descriptive study of phonology, grammatical structure, and vocabulary of modern German with consideration of its structural differences from English and application to teaching. Appropriate for students with at least two years of German. Conducted in English.

412-3 History of the German Language. Development of German from its Indo-European origin to the present in political and cultural context. The main linguistic aspects dealt with are lexical and semantic changes. Appropriate for students with at least two years of German. Readings in German. Conducted in English.

435-3 Business German. An overview of German business, presented through lectures, readings and discussions. Coursework with textbook and supplementary materials will focus on the major aspects of German business. Exercises will include vocabulary building, listening and reading comprehension, oral and written summarization, role playing in typical situations, mock telephone conversations and business correspondence. Prerequisite: 320b or consent of instructor.

440-3 Studies in Early German Literature. The literature of the German-speaking countries

539-1 to 3 Literature of the 17th Century. Collaborative research in selected works of neo-classical French authors. Lectures, reports, discussions, paper.

540-1 to 3 Literature of the 18th Century. Selected topics, movements, or authors in the literature of the 18th Century.

550-1 to 3 Literature of the 19th Century. Selected topics, movements, or authors in the literature of the 19th Century.

560-1 to 3 Literature of the 20th Century. Study of an author, theme, movement, or critical literary issue of contemporary interest. Topics may range from the Existentialist vision or the Quest for Self to the novel of commitment of the New Novel.

599-1 to 6 Thesis.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

from the early Middle Ages through the seventeenth century, with varying emphasis on authors, themes, genres, periods. Prerequisite: 330 or 335, consent of instructor, or graduate standing.

450-3 Studies in 18th Century Literature. Examination of the major writers and movements with their social, historical, and intellectual background during the 18th century in Germany and Austria. Prerequisite: 330 or 335, consent of instructor, or graduate standing.

455-3 Studies in 19th Century Literature. Detailed focus on specific aspects rather than a general survey of 19th century literature, e.g., major periods and movements, or major genres and sub-genres, or major and representative authors. Prerequisite: 330 or 335, consent of instructor, or graduate standing.

480-3 Studies in 20th Century Literature. Detailed focus on specific aspects rather than a general survey of 20th century literature, e.g., major periods, movements, and tendencies, or major genres and sub-genres, or major and representative authors. Prerequisite: 330 or 335, consent of instructor, or graduate standing.

488-3 Advanced German as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for reading and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of *B* or *A*, satisfies

graduate program requirement for foreign language as a research tool. Prerequisite: Passing of CLEP test in German; or one year of college-level German; or consent of instructor (as determined by examination).

490-1 to 6 (1 to 3, 1 to 3) Independent Study in German. Project-study under supervision of German faculty. Amount of credit depends on scope of study. May be repeated as the topic varies, up to the maximum of six semester hours. Prerequisite: senior or graduate standing and approval of supervising instructor.

493-3 to 9 (3 per topic) Seminars in Special Topics in Literature and Language. Topics vary and are announced in advance; both students and faculty suggest ideas. May be repeated as the

topic varies. Primarily for undergraduates. Prerequisite: consent of instructor.

590-3 to 9 (3 per topic) Independent Study on Special Topics in Literature and Language. May be repeated only if the topic varies, and with consent of department.

599-1 to 6 Thesis.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Japanese (JPN)

No graduate program in Japanese is offered through the Eastern Languages and Civilization section. Four-hundred-level courses in this section may be taken for graduate credit unless otherwise indicated in the course description.

410-3 The Linguistic Structure of Japanese. (Same as Linguistics 412.) Inductive approach to the analysis of various aspects (such as phonology, morphology, syntax) of Japanese grammar with emphasis on syntactic structures within any of the current theoretical frameworks such as pragmatics, functionalism and formal linguistics. May include contrastive analysis between Japanese and English, and close examination of theories of comparative-historical linguistics of Japanese and Korean. Prerequisite: one year of Japanese or one previous course in linguistics or consent of instructor.

435-3 Business Japanese. An introduction to the language and culture of the Japanese business world and to the structure of the Japanese business economy. The emphasis will be on learning appropriate levels of formality and politeness in oral communication and on achieving competency in the specialized language of business. Prerequisite: 320 or equivalent.

490-1 to 6 Advanced Independent Study in Japanese. Directed individual study of some questions, author, or theme of significance in the field of Japanese literature, language or culture. Prerequisite: consent of instructor.

Russian (RUSS)

No graduate program is offered through the Russian section. (See Chapter 2 for Russian as a teaching specialty for the Master of Science in Education degree in secondary education or in higher education.) Four-hundred-level courses in this section may be taken for graduate credit unless otherwise indicated in the course description.

Courses numbered 388 and 488 are designed to help graduate students prepare for proficiency examination required by certain departments as evidence of competency in Russian. No prerequisite is stipulated. Students must register for these courses and are advised to take them as part of, not in addition to, their graduate program. Students will not receive graduate credit for courses numbered below 400.

388-3 Russian as a Research Tool. Intensive study of Russian as basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor.

411-3 Russian Stylistics. Writing styles in Russian and its application to the development of skills in written expression. This course satisfies the COLA Writing Across the Curriculum requirement.

415-3 Russian Linguistic Structure. Structural analysis of present-day Russian with special attention to morphology and syntax.

430-4 Business Russian. A study of the style of commercial language and its application to the development of skill in business correspondence, such as: inquiries, offers, orders, contracts, agreements, as well as documents concerning transport, insurance and customs. Prerequisite: 201 or equivalent.

465-3 Soviet Russian Literature. Major fiction writers and literary trends since 1917. Lectures, readings and reports.

470-3 Soviet Civilization. Soviet culture and civilization is studied primarily through literary works, journalistic materials, and excerpts from non-literary works as general background reading. Lectures are illustrated with maps, slides, films and art works. Taught in English. Readings

are in English and in bilingual edition. No prerequisite: May count toward Russian major with consent of graduate adviser.

475-2 to 3 Travel-Study in USSR. Specialized course comprising part of the travel-study program in the Union of Soviet Socialist Republics. Prerequisite: 201 or equivalent.

480-4 Russian Realism. Authors in 19th century Russian literature. Special attention to stylistic devices. Lectures, readings, and individual class reports.

485-3 Russian Poetry. A study of literary trends and representative works of Russian poets.

488-3 Advanced Russian as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of B or A, satisfies graduate program requirement for foreign languages as a research tool. Prerequisite: 388 or one year of Russian or equivalent.

490-1 to 6 Advanced Independent Study in Russian. Directed independent study in a selected area of Russian studies. Prerequisite: consent of instructor.

Spanish (SPAN)

Courses numbered 388 and 488 are designed to help graduate students prepare for proficiency examination required by certain departments as evidence of competency in Spanish. No prerequisite is stipulated. Students must register for these courses and are advised to take them as part of, not in addition to, their graduate program. Students will not receive graduate credit for courses numbered below 400.

388-3 Spanish as a Research Tool. Intensive study of Spanish as a basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor.

410-3 Advanced Language Study. Intensive writing practice with emphasis on style, organization and problematic aspects of grammar. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: 320.

411-3 Linguistic Structure of Spanish. (Same as Linguistics 414.) Theory and practice in Spanish pronunciation and study of Spanish grammatical structure, in contrast to English, with application to teaching.

412-3 History of the Spanish Language. Survey of internal and external history, from Vulgar Latin to Modern Spanish.

419-3 Romance Philology. (Same as French 419.) Historical and comparative study of the major Romance languages: their phonology, morphology, and syntax.

425-3 Spanish Literature Before 1700. The literature of Spain from its beginnings in the Middle Ages through the Golden Age.

430-3 The Golden Age: Drama. Plays of Lope de Vega, Calderon, Tirso de Molina, and others.

493-3 to 9 (3 per topic) Seminars in Special Topics in Literature and Language. Topics vary and are announced in advance; both students and faculty suggest ideas. Students taking the course for graduate credit will do a critical study of one aspect. May be repeated as the topic varies. Prerequisite: consent of instructor.

501-2 Seminar on a Selected Russian Author. Intensive study of one author, including the author's life, work, and place in the literary and cultural development of civilization.

502-2 Seminar in Contemporary Russian Literature. Intensive study of the works of representative Russian authors, with special reference to the correlation existing between literary expression and social, economic, and political conditions since the Revolution. Lectures, outside readings, reports are required.

599-1 to 6 Thesis.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

431-3 Cervantes. *Don Quixote*.

434-3 Colonial Literature in Spanish America. Study of the literature of Spanish America before 1825.

435-3 Business Spanish. Discussion and practice of the vocabulary, styles, and forms used in Spanish business correspondence, as well as report writing and documents dealing with trade, transportation, payment, banking and advertising. Prerequisite: 320.

460-3 Spanish Literature of the 20th Century. The main currents and outstanding works in the literature of Spain since 1900.

463-3 Chicano Literature. An introduction to the literature written in the United States by Chicanos and other Hispanics.

485-3 The Spanish American Short Story. Survey of the genre in Spanish America.

486-3 Spanish American Drama. A survey of the development of the genre from the earliest times to the present.

487-3 The Spanish American Novel. Survey of the genre in Spanish America.

488-3 Advanced Spanish as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for in-

tensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of B or A, satisfies graduate program requirements for foreign languages as research tool. Prerequisite: 388 or one year of Spanish or equivalent.

490-1 to 3 Advanced Independent Study. Individual exploration of some topic in Hispanic literature, language, or culture. Prior consent of instructor required.

493-3 to 9 (3 per topic) Special Topics in Literature and Language. Topics vary and are announced in advance. May be repeated as the topic varies. Prerequisite: consent of instructor.

502-3 to 6 (3,3) Seminar in Hispanic Linguistics. Involves intensive study of a selected topic.

503-3 to 6 (3,3) Selected Topics in Literature and Language. Topics in Spanish Literature, Spanish-American Literature and Hispanic Linguistics vary and are announced in advance.

504-3 to 6 (3,3) Seminar in Spanish Literature and/or Spanish American Literature. Intensive study of a selected topic.

521-3 Medieval Spanish Literature. Studies in epic and didactic literature, and lyric poetry.

530-3 Golden Age Drama. Intensive study of Golden Age drama.

535-2 to 4 (2,2) Spanish American Literature before 1900. Intensive study of a literary movement, trend, genre, or author of the period, as

specified by the topic to be announced for each semester.

536-1 Teaching Spanish at the College Level. Prepares graduate students in Spanish for teaching at the college level. Required of all teaching assistants in Spanish.

540-3 Spanish Literature of the 18th and 19th Centuries. Intensive study of a literary movement, trend, genre, or author of the period, as specified by the topic to be announced for each semester.

560-3 Spanish Literature of the 20th Century. Intensive study of a literary movement, trend, genre, or author of the period, as specified by the topic to be announced for each semester.

565-3 to 6 (3,3) Spanish American Literature of the 20th Century. Intensive study of a literary movement, trend, genre, or author of the period, as specified by the topic to be announced for each semester.

599-1 to 6 Thesis.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Forestry

E-mail: jwilson@siu.edu

COLLEGE OF AGRICULTURE

Aubertin, Gerald M., Associate Professor, Ph.D., Pennsylvania State University, 1964; 1976.

Brown, Gregory G., Assistant Professor, Ph.D., University of Idaho, 1992; 1996.

Budelsky, Carl A., Assistant Professor, Ph.D., University of Arizona 1969; 1967.

Burde, John H. II, Associate Professor, Ph.D., University of Arizona, 1974; 1974.

Chilman, Kenneth C., Associate Professor, Ph.D., University of Michigan, 1972; 1973.

Fralish, James S., Associate Professor, Ph.D., University of Wisconsin, 1970; 1969.

Kung, Fan H., Professor, Ph.D., Michigan State University, 1968; 1970.

Mangum, Jean C., Assistant Professor, Ph.D., Purdue University, 1991; 1996.

McCurdy, Dwight R., Professor and *Chair*, Ph.D., Ohio State University, 1964; 1965.

Phelps, John E., Associate Professor, Ph.D., University of Missouri, 1980; 1990.

Roth, Paul L., Professor, Ph.D., Kansas State University, 1968; 1967.

The Department of Forestry offers advanced courses for the Master of Science degree with a major in forestry. In addition, curricula are available which permit graduate students with an interest in forestry to pursue their interest in Doctor of Philosophy degree programs in other departments.

Admission

In addition to requirements set forth by the Graduate School, the Department of Forestry requires the following:

1. A minimum grade point average of 2.7 is required for admission ($A = 4.0$). A grade point average of 2.7 or higher is required for stipend eligibility when available.
2. The student is required to provide proof of proficiency in technical writing. Normally an expository essay is required to evaluate whether the student should have remedial grammar or writing courses.

3. Three letters of recommendation from former professors, employers, or other responsible individuals are required.
4. The aptitude test of the Graduate Record Examination is required of all applicants. This test may be taken during the first semester of residence.
5. Each applicant must complete the statement of interest form. This form indicates the student's area of interest in forestry and the faculty member with whom the student desires to study. All correspondence should be directed to the chair of the Department of Forestry.

Retention and Completion Requirements

Upon the graduate student's arrival on campus, an advisory committee of 3-5 members of the graduate faculty will be formed to guide the student's work. The same committee will be responsible for preparation and administration of thesis exams and also for the review and evaluation of the thesis. The advisory committee chair and at least one other member of the committee shall be members of the forestry department. The other members may be selected from any academic unit including forestry.

Summary of Events.

1. The deadlines for receipt of applications and official transcripts in the office of the Graduate School are (a) the second Saturday in July for admission to the fall semester (b) the last Saturday in November for admission to the spring semester (c) the last Saturday in March for admission to the summer term.
2. Letters of recommendation should reach the forestry department chair by the same dates as above.
3. Acceptance by department and Graduate School should be announced one month or earlier than the desired matriculation date. A thorough review will be made by a screening committee of forestry department graduate faculty and the departmental adviser. Students rejected for admission will also be notified.
4. Registration for first semester's work after student's acceptance by the department.
5. Appointment of advisory committee chair, written plan for course work, and selection of tentative thesis areas all within first 2 months of residence.
6. Preparation of formal written thesis outline and preparation of research proposal by the eighth week of the second semester.
7. Completion of final, typed or reproduced review copies of thesis and submission of advisory committee at least 3 weeks in advance of oral defense of thesis. Handwritten or incomplete work will not be acceptable.
8. Oral exam to be followed by completion of required approval forms. If thesis requires modifications, this should be accomplished immediately to reach the graduate dean's office in due time set by the Graduate School. One bound copy of the thesis will be provided for the department, 1 for the chair of the advisory committee in addition to 2 copies required for the Graduate School and a copy for the author. Additional copies may be required for projects sponsored by outside agencies.

Master of Science Programs

The Department of Forestry offers 3 areas of concentration with specialties within each. Combination of emphasis is possible.

FOREST RESOURCE MANAGEMENT CONCENTRATION

Under this heading, a graduate program may be elected with an area of emphasis in forest management, forest ecology, forest resources measurements, forest resources economics, forest genetics, or forest policy and administration.

OUTDOOR RECREATION RESOURCE MANAGEMENT CONCENTRATION

Emphasis may be made in social, managerial, or natural science aspects of wild-lands recreation and park planning and management in the given graduate program depending on the student's interest.

WOOD SCIENCE AND TECHNOLOGY

Physical, mechanical, or biological properties of wood or woodbase materials may be studied. Also, the production and marketing of forest products may be selected.

A specialty in environmental studies in forestry is available.

Assistantships and Fellowships. Research assistantships are sponsored each year by the McIntire-Stennis Cooperative Forest Research Act. Teaching assistantships funded by the School of Agriculture are also available.

In addition to general awards made through the Graduate School, stipends for research studies are available from the Federal Forest Service, the U.S. Department of Interior, other federal and state agencies, and private corporations.

Requirements

Since the normal minimum requirement for graduation is 32 semester hours, the completion of degree work for students holding assistantships should be accomplished within four semesters (including summer) which is also the normal maximum span for financial aid.

The student must attain a grade of *B* or better for all courses specifically required in the student's academic program and which are offered by the Department of Forestry.

To gain teaching experience, graduate students are expected to assist in the classroom or laboratory for at least 1 academic semester (20 hours per week) during their tenure with the forestry department. The remaining semesters will also involve either research or teaching at the rate of 20 hours a week. All graduate students are required to enroll in Seminar (FOR 501) for 2 semesters for which they will receive 1 semester hour of credit.

Staff

In addition to the faculty listed in the Graduate School Catalog, several adjunct professors also hold appointments with the forestry department. These professors are assigned to the Forest Science Laboratory of the North Central Forest Experiment Station and the Crab Orchard National Wildlife Refuge. They advise and serve on graduate guidance committees.

Research Facilities Land. SIUC is well endowed with a number of different forest types which are available to the forestry department for teaching and research purposes. In particular, we are conducting or planning research and demonstration programs on forest plots and experimental fields of the 3000 acres of the University and its experimental farms. We also have access to wooded lands of the 600 acres of the Touch of Nature Environmental Center, 400 acres at the Pine Hills Field Research Station, and other forests.

Through various memoranda of understanding and special use permits we have use of forested lands and plots on the 43,000 acres of the Crab Orchard

Wildlife Refuge, the 250,000 acres of the Shawnee National Forest, and the 4000 acres of the Trail of Tears State Forest, all of which are within an hour's drive of Carbondale. In addition, we can conduct basic research on the 640 acres tract of the Beall forest near Mt. Carmel, Illinois. The forests on this land represent one of the last central hardwoods remnants of virgin bottomlands and slopes and are under the jurisdiction of the Illinois Nature Preserves Commission.

Physical Facilities. A research greenhouse operated in cooperation with the U.S. Forest Service at the Tree Improvement Center on the western side of the campus is in operation for research and graduate teaching. Greenhouses and growth chamber facilities in the agriculture greenhouses in conjunction with the Department of Plant and Soil Science are also available.

A variety of laboratories for all phases of forestry research as well as access, through cooperative agreements, to laboratory facilities with other agencies on the campus are in service. The Forest Science Laboratory of the U.S. Forest Service, located adjacent to the forestry department offices, is available to our graduate students for research and other functions. In addition, a wood testing laboratory and a large wood products pilot plant is accessible at SIUC College of Technical Careers.

Courses (FOR)

Courses in this department may require the purchase of supplemental materials. Field trips are required for certain courses.

401-3 Fundamentals of Environmental Education. (See Agriculture 401.)

402-3 Wildland Hydrology. Fundamentals of hydrology as related to forest and wildland water resources will be emphasized. Considerations will include the hydrologic cycle with emphasis on soil and groundwater regimes, evapotranspiration, surface and subsurface runoff and the quantity and timing of water yield. Offered spring semester, odd years.

403-3 Introduction to Agroforestry. This introductory, lecture-discussion course will examine the various agroforestry concepts, systems, technologies and practices. Focus will be on the potential use and benefits of agroforestry, which involves the deliberate combining of woody perennials with herbaceous/agronomic crops and/or animals, on the same land management units, in some form of spatial arrangement and/or temporal sequence to produce desirable ecological and economical interactions among the different components. Prerequisite: junior standing or consent of instructor.

405-2 Forest Management for Wildlife. Interrelations between forest practices and wildlife populations. Emphasis is on habitat requirements of different wildlife species and ways to manipulate the forest to improve wildlife habitats. Prerequisite: forestry major, or consent of instructor.

408-4 Introduction to Remote Sensing and GIS. Introduction to the important characteristics of platforms and sensor systems used in modern remote sensing applications to forestry and the storage, analysis and display of this information by micro computers using vector and raster GIS configurations. Prerequisite: 414 and advance standing.

409-3 Forest Resources Decision-Making. Examines management planning decision-making for multiple-use forests particularly in the public

sector. Reviews concepts useful for analyzing flow-resource problems, emphasizing systems approaches, introduces use of modern quantitative methods to evaluate resource use alternatives. Case studies. Prerequisite: 411, Mathematics 140.

410-3 Forest Resources Administration and Policy. Nature of administrative organizations and influences on behavior of organization members. Society influences causing changes in forestry related organizations. Policy formation and implementation, including roles of special interest groups.

411-3 Forest Resources Economics. Introduction to forest economics: Application of micro- and macro-economic principles to forest timber and non-timber production; capital theory; benefit-cost analysis; and economics of conservation. Prerequisite: Economics 240 or Agribusiness Economics 204; and Mathematics 140.

412-2 Tree Improvement. Basic theories and techniques of obtaining genetically superior trees for forest regeneration. Prerequisite: senior standing.

414-3 Information Management. The collection of physical, biological, and social variables in the field of forestry through sampling survey. The procedures of data manipulation and calculation and the presentation of graphs and tables.

416-3 Forest Resource Management. The application of business procedures and technical forestry principles to manage forest properties. Emphasis on integrated resource management for tangible and intangible benefits. Field trips and supplemental purchases approximately \$25 for student. Prerequisite: summer camp or consent of instructor.

417-2 Forest Land-Use Planning. Principles of location theory as a basis for determining land use; supply of forest land; population pressure and demand; conservation principles; determina-

tion of forest land values; institutional factors influencing forest land-use; forest taxation; special taxes, and capital gains. Taught in alternate years. Prerequisite: 411 or consent of instructor.

418-2 Marketing of Forest Products. The role of marketing in the forest industries; review of economic principles; product policy, planning the product line, pricing, marketing channels, marketing programs, marketing organization and marketing research as influences on the marketing of lumber, wood products, pulp and paper. Taught in alternate years. Prerequisite: 411 or consent of instructor.

420-3 Park and Wildlands Management. The management of state and federal parks and recreation areas. A systems approach toward management and decision-making will be emphasized. Requires supplemental purchases of approximately \$5 per student. Prerequisite: 320c.

421-3 Recreation Land-Use Planning. Principles and methods for land-use planning of park and recreation environments with emphasis on large regional parks. Focus on planning process and types of information to gather and organize. Application in group field projects. Prerequisite: 320, 420 or consent of instructor.

422C-4 Park and Wildlands Management Camp. A study of park conditions, visitors, and management practices at selected county, state, and federal park systems in the United States, including the federal wilderness preservation system. Course requires a field trip and supplemental purchases. Prerequisite: 320 and 320c and consent of instructor.

423-3 Environmental Interpretation. (See Agriculture 423.)

430-3 Wildland Watershed Management. Emphasis is placed on the principles, technical problems, procedures, alternatives and consequences encountered in managing wildland watersheds for the production of quality water in harmony with other uses. Prerequisite: 331.

431-3 Regional Silviculture. Designed to evaluate the various silvicultural practices as they are commonly employed in various regions of the United States. Offered alternate years. Prerequisite: 310.

451-2 Natural Resources Inventory. Theory and practical problems in biometrics to obtain estimates of natural resource populations. Use of computers and other advanced techniques. Case studies of inventory procedures. Field trip cost: maximum \$20. Prerequisite: 351 or consent of instructor.

452-2 Forest Soils. Characterization and fundamental concepts of forest soils and their relationships to forest communities and forest management practices. Emphasis is on the origin of forest soil material, soil forming processes and the chemical, physical and biological properties of soils as related to forests and forest management. Prerequisite: Plant and Soil Science 240 and concurrent enrollment in Forestry 452L. Spring semester even years.

452L-2 Forest Soils Laboratory. Companion laboratory for 452. Emphasis is on methods to characterize and evaluate the chemical, physical, and biological properties of forest soils. Prerequisite: Plant and Soil Science 240 and concurrent

registration in Forestry 452. Spring semester even years.

453-2 Environmental Impact Assessment in Forestry. Methods of assessing the environmental impact of land-use systems on forest resources and assessing the impact of forest management systems on environmental quality are presented. Case studies culminating in the preparation of environmental impact statements are emphasized. Field trips cost: \$20. Prerequisite: senior standing in a natural resource major.

454-2 to 8 Forest Ecology Field Studies. A study of forest communities, soils and site conditions in one of the following ecosystems: (a) Boreal; (b) Lake states; (c) Southern Appalachians; (d) Southern pine. Course requires a field trip of about 10 days. Each trip is two semester credits; a maximum of 6 credits may be applied toward graduate credit. Estimated cost: \$125.00 per trip. Prerequisite: senior standing in natural resources or biological sciences, courses in tree identification, forest ecology and soils and consent of instructor.

460-2 Forest Industries. Analysis of raw material requirements, the processes and the products of forest industries. The environmental impact of each forest industry will also be discussed.

470-2 Wilderness Management, Policy, and Ethics. Study of current management philosophy and practice in America's wilderness. Analysis of current wilderness policy and its historical evolution. Discussion of the evolution of the wilderness idea and the individuals that have influenced it. Weekend field trip required. Prerequisite: 320 or consent of instructor.

494-1 to 6 Practicum. Supervised practicum in a professional setting. Emphasis on administration, supervision, teaching and program leadership in community, school, park, forest, institution and public or private agencies. Students should enroll according to their curriculum specialization: (a) Forest environmental assessment, (b) Outdoor recreation resource management, (c) Forest resources management. Prerequisite: consent of instructor.

500-2 Principles of Research. Research philosophy, approaches to research; theory, hypotheses inference, and predicting; problem identification, project development and organization; methods of data collection, analysis and presentation; drawing conclusions and organizing results. Prerequisite: four hours in statistical methods or consent of instructor.

501-1 Graduate Seminar. Presentation and critiques of current research project of faculty, graduate student and selected resource persons.

511-2 Advanced Forest Resources Economics. Application of microeconomic, macroeconomic and capital theory to forest resource problems; introductory econometric methods; long range supply and demand projections; international forest economics and policy problems decision theory in forest resource management. Offered alternate years. Prerequisite: 411 or equivalent or consent of instructor.

512-2 Tree Selection and Breeding. Quantitative methods of describing variation patterns of trees, testing genetic and environmental effects and interactions and evaluations of tree im-

provement program. Prerequisite: 412 or consent of instructor.

516-2 Advanced Forest Management. Case studies in forest land management, management planning, utilizing computer programming, CFI and TSI role in long range management planning. Offered alternate years—odd. Prerequisite: 416, 331 and summer camp or consent of instructor.

520-2 Advanced Park Planning. Study of nature and functions of the recreation environmental planning process in theoretical and policy terms. Types of plans at local, regional and state levels. Evaluation of different types of planning approaches and their utility in particular situations. Offered alternate years. Prerequisite: 421 or consent of instructor.

521-2 Recreation Behavior in Wildlands Environments. Review of sociological and psychological theories relevant to outdoor recreation planning; management alternatives. Review of current behavior research in outdoor recreation. Application of behavioral concepts to recreation planning and administration. Offered alternate years.

530-2 Forest Site Evaluation. A discussion of the factors affecting site quality and their use in present site evaluation methods. Lectures will draw upon recently published scientific literature as well as forest research data collected and analyzed for southern Illinois forests. Laboratories will include sampling of forest sites and stands with subsequent analysis of data using graphic and statistical techniques and a computer to de-

velop site evaluation models. Cost \$20. Prerequisite: 300, Biology 307 or consent of instructor.

531-2 Biological Productivity of Forests. The production and accumulation of organic matter in forest ecosystems is analyzed in relation to vegetational composition and structure, biogeochemical cycles, and environmental factors. Methods of quantifying productivity are emphasized during laboratory period. Cost: approximately \$15. Offered alternate years. Prerequisite: 331 or equivalent.

588-1 to 6 International Graduate Studies. University residential graduate program abroad. Prior approval by the department is required both for the nature of program and the number of hours of credit.

590-1 to 4 Readings in Forest Resources. Intensive consideration is given to current practices and problems in forestry. Prerequisite: consent of instructor.

593-1 to 4 Individual Research. Directed research in selected fields of forestry.

599-1 to 6 Thesis. Minimum of five hours to be counted toward a Master's degree.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Geography

E-mail: absher@siucvmb.siu.edu

COLLEGE OF LIBERAL ARTS

Arey, David G., Associate Professor, Ph.D., Clark University, 1969; 1971.

Baumann, Duane D., Professor, Ph.D., Clark University, 1968; 1967.

Beazley, Ronald I., Professor, *Emeritus*, Ph.D., Purdue University, 1954; 1959.

Bennett, David A., Assistant Professor, Ph.D., University of Iowa, 1994; 1993.

Bhattacharyya, Jnanabrata, Associate Professor, Ph.D., University of Delhi, India, 1969; 1968.

Christensen, David E., Professor, *Emeritus*, Ph.D., University of Chicago, 1956; 1961.

Denise, Paul S., Assistant Professor, *Emeritus*, Ph.D., University of California, Berkeley, 1974; 1968.

Duram, Leslie, Assistant Professor, Ph.D., University of Colorado at Boulder, 1994; 1994.

Dziegielewski, Benedykt, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1983; 1985.

Horsley, A. D., Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1974; 1968.

Irwin, Daniel R., Associate Professor, *Emeritus*, Ph.D., Syracuse University, 1972; 1959.

Jones, David L., Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1960; 1965.

Lant, Christopher L., Associate Professor and Chair, Ph.D., University of Iowa, 1988; 1988.

Lieber, Stanley R., Professor, Ph.D., University of Iowa, 1974; 1975.

Perk, H.F.W., Lecturer, *Emeritus*, A.B., University of California, Los Angeles, 1951; 1964.

Sharpe, David M., Professor, Ph.D., Southern Illinois University at Carbondale, 1968; 1966.

The Department of Geography offers programs that lead to the Master of Arts, Master of Science, and the Doctor of Philosophy degrees in geography.

The Department of Geography also participates in the Interdisciplinary Doctor of Philosophy program sponsored by the Graduate School. Past students have combined geography with a variety of other disciplines to broaden and strengthen their education. The interdisciplinary doctoral program is described

in greater detail elsewhere in the Graduate Catalog (cf. Degree Requirements: Interdisciplinary Doctor of Philosophy Programs).

Geography is the discipline that deals with the relationship between human beings and their environment. The Department of Geography emphasizes the applied aspects of this theme, environmental analysis, planning, and management. The graduate program includes the several dimensions of this emphasis, e.g., the role of resources in economic development and regional planning from physical/biological, technological, socioeconomic, policy, and spatial viewpoints. Students take courses that give them a foundation in these dimensions of environmental planning and management through a core program, then develop an area of strength within this theme. Students also develop the analytic and research skills appropriate to their emphasis.

The graduate program stresses a problem-solving perspective, for which habits of critical analysis and dialogue are essential. Students take the initiative in designing and carrying out their programs with the guidance of an advisory committee and the departmental faculty. Geography maintains major linkages with many other departments. Courses and faculty expertise in other departments complement those in geography, and students are encouraged to take advantage of this. Each student's progress is assessed at regular intervals by the faculty, and the student is notified of the faculty's assessment. The student is expected to show continued progress in carrying out the program of study, and in developing habits of scholarship and professionalism.

Requirements for the Master of Arts and Master of Science Degrees

Advisement. Students newly admitted to the master's degree program are advised by the graduate program director, with the assistance of departmental faculty. Students choose a permanent adviser at the end of the first semester in residence. The choice of permanent adviser and advisory committee is made in consultation with the graduate faculty, taking into consideration such matters as faculty expertise and faculty advisee loads.

Degree Requirements. To obtain the master's degree, the student shall:

1. Complete all degree requirements specified by the Graduate School, and explained under degree requirements, master's degree program in the *Graduate Catalog*.
2. Include as required courses the following: GEOG 500-2, Principles of Research, during the first fall semester in residence; GEOG 501-2, Seminar in Geographic Research, the following semester; GEOG 410, Techniques in Geography; and one research seminar.
3. In consultation with an adviser, develop a program of study, identifying courses to be taken, research skills to be developed, deficiencies to be rectified. This shall be approved by the faculty. The program of study shall include a core of substantive courses in geography, as explained in the policy statement on core curriculum for master's degree students, available from the graduate program director. The program of study may include non-geography courses. The graduate faculty will meet to review and approve/disapprove the program of study of each master's degree student enrolled in GEOG 500. An approved program of study will be filed with the graduate program director and department chair as part of GEOG 500.
4. Develop a thesis or research paper proposal. The thesis or research paper proposal must be approved by the student's master's advisory committee before the student registers for GEOG 599, Thesis or GEOG 593, Research in Geography. A total of 4–6 semester hours of GEOG 599 may be awarded for a thesis at the discretion of the advisory committee upon final examina-

tion on the thesis (see #5 below). A total of 2-3 semester hours may be awarded for a research paper.

5. Submit a thesis or research paper to the advisory committee at least 2 weeks before the comprehensive examination. A student who writes a thesis will be examined by the committee, at a meeting that may be attended by other faculty and students. A research paper will be evaluated and approved by the advisory committee without public presentation.
6. Complete a comprehensive examination. The statement of departmental policy on the master's comprehensive examination is available from the graduate program director. The comprehensive examination and evaluation of thesis or research paper shall be at least 6 weeks prior to the student's projected graduation date. Upon approval of the comprehensive examination and the thesis or research paper, the advisory committee will request the chair of geography forward to the Graduate School the recommendation that the master's degree be awarded.

Accelerated Entry into a Doctoral Program. After completion of one semester of residence in the Master of Arts or Master of Science degree program the student may petition the graduate faculty for direct entry into the Ph.D. degree program. Prerequisite to petition is outstanding performance in GEOG 500, Principles of Research as judged by a majority of the faculty and clear promise of early development of requisite research skills. Additional evidence of a student's readiness to begin doctoral work includes undergraduate and graduate records, scores on exams such as the GRE, standardized tests, and reference letters. Students must meet all retention and exit requirements for the regular doctoral option. The student must submit the application materials required for regular admission to the Ph.D. degree program.

Requirements for the Doctor of Philosophy Degree

The doctoral degree in geography is a specialized research degree. The doctoral program assumes a broad background comparable to that provided by the department's masters core. It is designed to develop a comprehensive yet critically analytic knowledge of theory, literature, research design, and application related to environmental analysis, planning, and management. The doctoral student will emphasize two subfields in which to propose creative research.

Advisement. The doctoral student initially is advised by the graduate program director. Before the end of the first term of doctoral work, the student will select an adviser and they jointly will recommend a doctoral program of study and committee members to the graduate faculty for approval. The student and the doctoral committee will ascertain appropriate tools and cognate courses; proficiency in these will be certified by the doctoral committee. It is recommended that all doctoral students have a minimum of one semester of teaching or research assistant experience.

Degree Requirements. To obtain the Doctor of Philosophy degree, the student shall:

1. Complete all degree requirements specified by the Graduate School, and explained under degree requirements, doctoral degree program in the Graduate Catalog.
2. Include in the course of study the following: GEOG 500-2, Principles of Research during the first fall semester in residence; GEOG 501-2, Seminar in Geographic Research in the following semester; GEOG 510, Multivariate Techniques in Geography; and 3 research seminars.

3. Demonstrate a broad background comparable to the department's masters program by a procedure to be specified by the graduate faculty. The statement of departmental policy on core curriculum for doctoral students is available from the graduate program director.
4. In consultation with an adviser, develop a program of study, identify courses to be taken, research tools to be developed, general dissertation topic, and names of adviser and doctoral committee members. The graduate faculty will review the tentative program of study in a meeting at the end of GEOG 500, and provide advice for modifications. The graduate faculty will meet at the end of GEOG 501 to approve/disapprove the program of study. An approved program of study will be filed with the graduate program director and departmental chair as part of GEOG 501.
5. Pass a comprehensive (preliminary) examination. Upon completion of program of study, the student will complete a written and oral comprehensive examination in 2 subfields that relate to the student's research emphasis. The written portion of the comprehensive examination will be prepared by the student's doctoral committee, which will evaluate the performance and judge the student's success or failure. The examination then will be circulated to the graduate faculty. The oral examination will take place not less than 1 week or more than 2 weeks from the time of the written examination. The oral examination will be conducted by the student's doctoral committee with appropriate opportunity for all graduate faculty to ask questions. The student's success or failure of the oral examination will be judged by the student's doctoral committee. A student who fails the written or oral comprehensive examination may retake the examination after appropriate remedial action, as specified by the doctoral committee. A student who fails the second written or oral examination will be dropped from the doctoral program.
6. Having passed the comprehensive examination, present a dissertation proposal at an open meeting of the Department of Geography. The written and oral examination and presentation of the dissertation proposal are prerequisite to admission to candidacy.
7. Complete a dissertation. The student's written dissertation will be circulated to members of the doctoral committee at least 2 weeks in advance of the proposed dissertation defense. The doctoral committee will issue a public invitation a week in advance of the scheduled date of the dissertation defense. After necessary revisions have been made, the dissertation will be sent to the student's doctoral committee for final approval. The judgment of the doctoral committee will be expressed to the student and forwarded to the chair of the department for recommendation to the Graduate School for conferring of the doctoral degree.

Courses (GEOG)

400-3 Geography of Outdoor Recreation.

Analysis of patterns of outdoor recreation with an emphasis on metropolitan areas. Selected topics include demand forecasting methods, cost-benefit analysis and the valuation of recreation resources and an analysis of the socioeconomic and spatial impacts of recreation facility provision.

404-3 Spatial Analysis. The purpose of this course is to equip the student with a series of perspectives and tools with which to view spatial phenomena. Emphasis is placed on methodological approaches to the analysis of areal distributions and phenomena. Longitudinal analysis of data is included. Prerequisite: 300. Geography 410 is advisable or consent of instructor.

406A-2 Introduction to Remote Sensing. An introduction to remote sensing as applied to the study of environmental systems. This course will examine the theoretical and practical concerns associated with the use and analysis of aerial photography and satellite imagery. Geography majors must take 406a and 406b concurrently. Others may take an approved alternative course in another department as a substitute for 406b.

406B-1 Introduction to Remote Sensing Laboratory. A hands-on, laboratory-based class that introduces students to remote sensing techniques as applied to geographical analysis. Emphasis is placed on the manual interpretation and analysis of remotely sensed photographs and imagery. However, students will be introduced to state of

the art digital image processing technology. Geography majors must take 406a and 406b concurrently. Others may take an approved alternative course in another department as a substitute for 406b.

408-3 Advanced Remote Sensing. Advanced techniques in the analysis of remotely sensed data. Emphasis is placed on digital image processing using state of the art technology. Students will be expected to develop individual problem-driven projects that use the knowledge, tools and techniques that are developed in this course. Two hours of lecture, two hours of lab each week. Prerequisite: 406a and 406b or consent.

410-4 Techniques in Geography. Geographic applications of basic and advanced statistical and mathematical techniques, including basic descriptive statistics, hypothesis testing, regression and correlation, analysis of variance and nonparametric statistics. Special emphasis on areal measures: nearest neighbor analysis, etc. Prerequisite: 300 or consent.

416-3 Analytical Cartography. An introduction to computer and analytical cartography. Students examine techniques for the representation, manipulation and display of spatial data using computer mapping techniques and software. Emphasis will be placed on algorithmic solutions to common cartographic problems. Students will be expected to complete a team based project that uses automated cartographic techniques to address a geographic problem. Prerequisite: 310 or computer literacy, or consent.

418A-2 Introduction to Geographic Information Systems. An introduction to geographic information systems (GIS) as it is applied to environmental problem solving. Examines the theoretical and practical concerns associated with the representation and analysis of geographic phenomena using computer technology. Geography majors must take 418a and 418b concurrently. Others may take an approved alternative course in another department as a substitute for 418b. Prerequisite: 310 or consent.

418B-1 Introduction to Geographic Information Systems Lab. A laboratory-based class that introduces students to the use and application of geographic information system (GIS) technology in geography. Students explore the utility of geographic information systems through team-based projects that provide hands-on experience with commonly used GIS hardware and software. Geography majors must take 418a and 418b concurrently. Others may take an approved alternative course in another department as a substitute for 418b. Prerequisite: 310 or consent.

420-3 Advanced Geographic Information Systems. Advanced concepts and techniques for computer-based analyses of geographic information. Students will be expected to develop individual problem-driven projects that use the knowledge, tools and techniques that are developed in this course. Two hours of lecture, two hours of laboratory each week. Prerequisite: 418a and 418b or consent.

421-2 Urban Geography. Examination of extracity relationships — theory and structure; intra-city relationships — theory and structure and

selected urban problems. Offered once annually. Prerequisite: 300 or consent.

422-4 Economics in Geography and Planning. Concepts, symbols, language, theory and elementary mathematics of economics and geography. Individual's preferences, production functions, the firm, markets, optimality, externalities and welfare economics. Elementary mathematics of time and intertemporal criteria. Prerequisite: 304 or consent of instructor.

424-4 Natural Resources Planning. Literature in resource management problems. Emphasis on theory, methods of measurement and evaluation concerning implications of public policy. The role of resources in economic development and regional planning, water and related land resource problems, and environmental quality from a multi-disciplinary perspective. Prerequisite: 422 or Agribusiness Economics 440 or consent.

425-4 Water Resource Planning Simulation. A review of water resource planning theory and practice from a physical, technological, economic, social and geographical viewpoint. Students design a comprehensive water resource plan including flood control, water supply, water quality, and recreation for a city of 175,000 population. This plan is "played" against a 50-year trace of hydrologic parameters in a computer simulation. Prerequisite: 424 or consent.

426-4 Administration of Environmental Quality and Natural Resources. (Same as Political Science 445.) An examination of institutional arrangements and administrative practices in the protection and use of land, water, air, and mineral resources. The course includes analysis of responsibility and decision-making at all levels of government (federal, state, and local) as well as corporate, interest group, and individual responses to public programs. Particular attention will be given to administration of federal environmental quality legislation including the National Environmental Policy Act, the Clean Air Act, the Water Pollution Control Act, and the Surface Mining Reclamation Act. Prerequisite: 300 or 326 or consent of instructor.

427-3 Environmental Perception and Planning. Deals with a description and assessment of the relevance of normative and descriptive theories of decision-making and theories of choice for public policy and environmental management. Studies of the perception of urban environments and other landscapes such as wilderness areas, and perception of and human response toward natural hazards will be considered. Prerequisite: 300 or consent.

430-3 Environmental Systems Analysis. Exploration of the major environmental systems relevant to environmental planning. Topics include concepts of systems and system behavior; basics of systems analysis and modeling environmental systems; environmental fluxes of energy and materials (e.g., hydrologic cycle, carbon cycle, energy budgets, erosion and sediment transport, role of biosphere in organizing fluxes); environmental variability. Prerequisite: 302 or consent.

432-4 Physical Environments of Cities. Energy and moisture budget concepts are developed from basic principles. Microclimatic data, instrumentation and applications stress urban exam-

ples. Models of climatic effects and modeling of people's effects concern city climates mainly. Charge not to exceed \$5 for field trips. Prerequisite: 302 or 430 or consent.

433-3 Advanced Physical Geography. Topics may include landforms, climate, soil or water. Varies with the interest of the instructor. Prerequisite: 302 or consent.

434-4 Water Resources Hydrology. Microclimatic factors which affect the hydrologic events of various climatic regions are treated extensively. Methods of estimating geographic variations in hydrologic relations to climatic and microclimatic especially evapotranspiration, are compared and evaluated. Consequences of alternative land uses on climate and hydrology are considered regionally. Charges are not to exceed \$10 for field trips. Prerequisite: 302 or 430 or consent.

435-3 Energy Planning. Regional and national differences in energy supply and demand are reviewed followed by a study of current energy resources, the range of demands and environmental impacts. National and international planning strategies for dealing with changes in energy demand and supply are explored and assessed for present and future implementation probability.

436-3 Environmental Disaster Planning. Develops the skills and perspectives needed to plan effectively for natural and man-made disasters. The concepts of risk analysis, hazard mitigation and preparedness, response and recovery of the economic and social infrastructure in areas impacted by earthquakes, floods, droughts, radioactive and toxic material releases, and other catastrophic events.

438-3 Applied Meteorology. Analysis of meteorological patterns approached through study of several case histories. Evaluation of meteorological data, air mass and frontal analysis, development of weather forecasts, study of meteorological instruments, clouds, and precipitation patterns. Charges not to exceed \$5 for field trips. Prerequisite: GEA 330 or consent of instructor.

439-3 Climatic Change — Inevitable and Inadvertent. The geologic time-scale perspective of major natural events that have affected the theoretical steady-state climate, and factors in contemporary societal practices that have brought about inadvertent climatic modification. An assessment of the means and extremes of parameter values in the geologic time-scale perspective studied will be compared with the documented and present-day climatic parameter means and extremes. Approaches to prognoses for the Earth's future climatic state will be made. Charges not to exceed \$10 for field trips. Prerequisite: GEA 330, Geography 331 or consent of instructor.

440-2 Tutorial in Geography. Prerequisite: geography major, senior standing.

443-3 Teaching of Geography. Presentation and evaluation of methods of teaching geography. Emphasis upon geographic literature, illustrative materials, and teaching devices suitable to particular age levels. Charges not to exceed \$3 for field trips. Prerequisite: 300.

452-3 Environment and Population. Introduction to population geography. Emphasis is on the relationships between population trends, resource

use patterns and environmental impacts. Topics include methods and data used to describe and predict populations, theories of population, and policy issues that relate to the interaction between population, quality of life and environmental quality. Prerequisite: 320 or consent.

454-3 Conservation and Environmental Movements. Emphasizes the ways in which humans view and interact with the environment. Conservation literature and the works of influential environmentalists are studied. Specific theories and environmental movements which help to explain society's current perception and use of the environment are studied. Prerequisite: 320 or consent.

456-3 Community Development Perspectives on Environmental Problems. An introduction to community development, a participatory strategy to social problems grassroots, community based and non-governmental organizations as catalysts of development in the Third World, the environments in which they function, their ideologies, their methods and their effectiveness. Issues of popular participation in development provide the continuity in the course.

458-3 International Environmental Movements and Organizations. International environmental movements and organizations, e.g., the Greens, the United Nations: their approach to environmental issues; their organizational and communication patterns; their relationship with national governments and their impact on environmental policy at national and international levels. Prerequisite: 424 and 454 or consent.

459-3 Culture, Political Economy and Sustainable Development. An examination of (1) the interaction of the elements that have shaped human actions towards environment in the modern period which also account for most of the conflicts over the uses, use values and values of environment; (2) the effects of conventional development practices on particular populations, such as women and indigenous peoples; and (3) alternative development policies and the idea of sustainable development. Prerequisite: 424 and 456 or consent.

471-3 Environmental Impact Analysis. Techniques of assessing the impact of human activities on the environment, including weighting schemes, cost-benefit analysis, linear programming, ecological impact assessment. Emphasis is on placing NEPA and EIS writing in legal, economic and environmental perspective. Prerequisite: 302 or 304 or consent.

475-3 Natural Resources Analysis Techniques. A study of procedures, analytical techniques, data sources and other aids for management and planning of environmental and other natural resources. Topics include techniques to promote public involvement in decision making, survey research methods, socio-economic forecasting methods, decision support techniques and project impact evaluation. Prerequisite: 410 and 422 or consent.

480-3 to 6 Internship in Geography. Supervised field work in private or public organization dealing with planning, environmental management, or cartography and geographic information management. A written proposal about the

planned internship must be submitted to a faculty supervisor prior to beginning of internship. A faculty supervised report on the work is required after the internship. Courses may be repeated, but no more than 3 credit hours may be applied to an undergraduate major. A graduate student may enroll for three credit hours. Prerequisite: geography major and consent of department.

481-6 to 12 Cooperative Work Experience in Geography. Placement of advanced undergraduate or graduate student in private or public organization for one or more semesters in paid career-related position. Student gains professional experience, under faculty and on-site supervision. A written proposal about the planned cooperative work experience must be submitted to a faculty supervisor before it begins. A report summarizing the work experience is required after the work experience ends. Course may be repeated. Three credit hours may apply toward requirements for a Geography major; three additional credit hours may apply toward degree requirements as elective. Prerequisite: geography major and consent of department.

495-1 to 6 Advanced Field Services Practicum in Southern Illinois. (Same as Social Work 495.) This course is directed at upperclassmen and graduate students volunteering service to community, social service, or health agencies in southern Illinois. Credit based on time spent in direct service. Approval of agency required for registration. Mandatory Pass/Fail for undergraduates.

500-2 Principles of Research. Problem identification in research, review of examples of geographic research, analysis of results of research and project statements are explored with appropriate faculty. Presentation of student research problems justification and identification of student program to complete degree are required.

501-2 Seminar in Geographic Research. Seminar approach to problems of completing background research design of project statements, identification of research methodology and completion of thesis/dissertation project statements. Prerequisite: 500.

510-4 Multivariate Techniques in Geography. Introduction to matrices, vectors and linear equations; multiple regression and correlation, cononical correlation, multivariate analysis of variance and covariance, analysis of variance in two- and three-way designs, multiple discriminant analysis, classification procedures, introduction to elementary factors analysis. Examples and demonstrations of each method; basic introduction to computer applications of multivariate analyses. Prerequisite: 410 or consent of instructor.

511-2 Philosophy of Geography. The nature of geography. Current trends in the field, present day geographers and schools of thought. Geography's place among the disciplines. Prerequisite: graduate standing.

514-2 College Teaching of Geography. Prerequisite: graduate standing.

520-2 to 4 Seminar in Physical Systems Evaluation. Prerequisite: graduate standing.

521-2 to 4 Seminar in Resource Planning. Prerequisite: graduate standing.

522-4 Seminar in Economics in Geography and Planning II. (Same as Economics 525.) Public expenditure criteria based on free-market allocation, public, private, and merit goods and services, and related planning; expenditure criteria based on comprehensive plans; expenditure criteria and planning in the absence of general optimality; multiple objectives, measurement of benefits and costs, shadow prices, choice of techniques in planning; consideration of uncertainty. Critical evaluations of applied work and models of development projects, and programs, by students. Prerequisite: 422 or consent of the instructor.

524-2 to 4 Seminar in Water Resources Analysis. The major goal of this course is to provide the student with the necessary quantitative skills and perspectives needed to assess water resources management problems. Prerequisite: graduate standing.

527-2 Seminar in Community and Change. This seminar explores conflicts between forces that help to maintain communities and those that tend to fragment them; e.g., conflicts between individuality and universality, law and individual actions, virtue and history. It explores some of the forces that have transformed the human condition: the Enlightenment; the Industrial Revolution; the rise of the State; the ascent of the economic society; and hegemonies. Prerequisite: graduate standing and 456 or consent.

528-2 to 4 Seminar in Geo-processing Technology. Examines current topics and trends in the rapidly evolving field of geo-processing techniques, including geographic information systems, remote sensing and spatial decision support systems. The topics and assignments will depend on the expertise of the instructor. Prerequisite: consent.

570-2 to 4 Planning Internship. Planning internship with city or regional planning agency or private planning firm. Prerequisite: 470a or consent of department.

591-2 to 4 Independent Studies in Geography. Prerequisite: graduate standing.

593A-2 to 24 (2 to 6 per semester) Research in Physical Geography. Prerequisite: 520.

593B-2 to 24 (2 to 6 per semester) Research in Economic Geography. Prerequisite: 521.

593C-2 to 24 (2 to 6 per semester) Research in Urban and Regional Planning. Prerequisite: graduate standing.

593D-2 to 24 (2 to 6 per semester) Research in Social Geography. Prerequisite: 524.

596-2 to 4 Field Course. Prerequisite: graduate standing.

599-2 to 6 Thesis. Prerequisite: graduate standing.

600-1 to 32 (1 to 16 per semester) Dissertation. Prerequisite: graduate standing.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Geology

E-mail: geology@geo.siu.edu

COLLEGE OF SCIENCE

Berry, Margaret E., Assistant Professor, Ph.D., University of Colorado, 1990; 1990. Soils, geomorphology, quaternary geology.

Crelling, John C., Professor, Ph.D., Pennsylvania State University, 1973; 1977. Coal petrology, coal geology, coal utilization.

Dutcher, Russell R., Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1960; 1970. Coal geology, field geology, coal petrology.

Esling, Steven P., Associate Professor, Ph.D., University of Iowa, 1984; 1982. Quaternary stratigraphy, hydrogeology, geomathematics.

Fifarek, Richard H., Associate Professor, Ph.D., Oregon State University, 1985; 1985. Economic geology, stable isotope geochemistry; fluid inclusion studies.

Frank, Charles, O., Assistant Professor, Ph.D., Syracuse University, 1973; 1970. Metamorphic petrology, igneous petrology.

Harris, Stanley, E., Jr., Professor, *Emeritus*, Ph.D., University of Iowa, 1947; 1949.

Kruege, Michael A., Associate Professor, Ph.D., University of California, Berkeley, 1985; 1987. Molecular organic geochemistry, petroleum geology.

Marzolf, John E., Associate Professor, Ph.D., The University of California, Los Angeles, 1970; 1982. Clastic sedimentology, clastic petrology, sequence stratigraphy.

Ravat, Dhananjay N., Assistant Professor, Ph.D., Purdue University, 1989; 1991. Geophysics, gravity, magnetics, tectonics.

Ritter, Dale F., Professor, *Emeritus*, Ph.D., Princeton University, 1964; 1972.

Robinson, Paul D., Senior Scientist *Emeritus*, M.S., Southern Illinois University at Carbondale, 1963; 1967.

Sexton, John L., Professor, Ph.D., Indiana University, 1974; 1985. Geophysics, seismic reflection and refraction.

Staub, James R., Assistant Professor, Ph.D., University of South Carolina, 1985; 1988. Coal geology, basin analysis, geological engineering.

Utgaard, John E., Professor, Ph.D., Indiana University, 1963; 1965. Invertebrate paleontology, paleoecology; environments of deposition, carbonate petrology.

Zimmerman, Jay, Jr., Professor and *Chair*, Ph.D., Princeton University, 1968; 1973. Structural geology, rock deformation.

The Department of Geology offers programs leading to the Master of Science degree and the Doctor of Philosophy degree in geology.

Graduate Programs

The objectives of the graduate degree programs are to develop the student's competence in the basic fields of geology and to provide for specialization dependent on student and faculty interest. Facilities and staff are available for studies involving surface and subsurface mapping, structural geology, petrology, paleontology, micropaleontology, paleoecology, coal petrology, coal geology, energy resources, stratigraphy, sedimentation, Pleistocene geology, sedimentary petrology, sedimentary environments, crystallography, mineralogy, low temperature geochemistry, ore deposits, petroleum geology, environmental geology, geomorphology, hydrogeology, and applied and solid earth geophysics. Many of the faculty are actively conducting research in which statistical and computer techniques are applied to problem solving in the earth sciences. Interdisciplinary research with other departments is encouraged.

Southern Illinois and adjacent areas offer a wide variety of geological conditions ideal for individual study and research. Experienced staff members work closely with students and provide individual assistance when necessary. The Illinois State Geological Survey and several major companies in the petroleum and coal industries actively support geological work in this area.

The major thrusts of the Ph.D. degree program focus on the geology of energy and mineral resources and geologic aspects related to exploration, development, utilization, reclamation, and environmental impact.

Students must be admitted unconditionally to the Graduate School before they can be officially admitted to either graduate program in geology. Admission to the graduate programs in geology is based on an evaluation of the preparation, ability, and promise of the applicant. Prerequisites for admission include: 1) receipt of GRE test scores sent directly to the Department of Geology;

the Geology Advanced Test is required; 2) completion of department application forms which are available on request from the department; and 3) receipt of at least 3 letters of recommendation from professors, academic advisers, former employers, or others familiar with the applicant's academic performance, research, or other relevant work. The Department of Geology normally admits graduate students for entrance in the fall semester; however, applicants will be considered for spring admission. The students will be expected to have satisfactorily completed at the undergraduate level the equivalent course work in the basic sciences required for a Bachelor of Science degree in geology at SIUC.

A student admitted with course deficiencies may be required to complete or audit some undergraduate courses. First year teaching assistants are required to enroll in and complete GEOL 500. Other specific requirements will be determined by the student's advisory committee and the department chair. Students are evaluated on an individual basis, their programs are determined by their career goals and the results of informal interviews with individual faculty members.

Requirements for the Master of Science Degree

A total of 30 hours of graduate work completed with a grade point average of 3.0 or better constitutes the minimum credit requirement for the master's degree.

Courses taken are determined by the student and an advisory committee. The student will not be allowed to apply more than 8 hours of independent study or research courses toward the master's degree (exclusive of thesis credits).

A student majoring in geology may select a minor field. The minimum course work should then include 20 hours of geology and 10 hours in the minor field.

A thesis subject must be approved by the chair of the advisory committee at least 20 weeks before the date of graduation.

A final oral examination, primarily concerned with defense of the thesis is administered as the last step before graduation. The student may be asked any questions the committee feels are relevant.

In order to pass the final oral examination, students must receive a favorable majority vote from their thesis committee meeting in formal session. Should the student fail the final oral examination, the student, upon concurrence of a majority of the committee, may arrange a time for a re-examination not less than 30 nor more than 120 days after the first examination. Students who fail the final orals on their second attempt will be ineligible for the master's degree from the Department of Geology.

Two copies of the approved thesis must be presented to the Graduate School at least three weeks prior to graduation, and a third copy must be presented to the Department of Geology.

Requirements for the Doctor of Philosophy Degree

Students entering the doctoral program in geology should meet, as a minimum, the requirements for the master's degree program listed above. However, exceptional students may be considered for direct baccalaureate degree entry or accelerated entry into the doctoral program. This requires approval by a majority vote of the faculty.

The Ph.D. degree program in geology is based primarily on the student's successful conduct of original research and presentation of an acceptable dissertation describing the results of that research. To achieve this goal, the student must meet the criteria established by the University, the Graduate School, and the Department of Geology as described below.

Students having completed a master's degree program or its equivalent must, upon entering the Ph.D. program, submit themselves to a preliminary counsel-

ing conference at the beginning of their first semester in the program. The format of the preliminary counseling conference is established by the faculty, and a copy of the procedures may be obtained in the departmental office. The purpose of this conference is to allow the students and their advisers to establish a suitable curriculum and research program commensurate with their backgrounds, interests, and professional goals. Nevertheless, each student is expected to take graduate level courses (excluding readings, independent studies, and internship) of at least 3 credits each from at least 4 different faculty members at SIUC, 3 of whom must be in the Department of Geology. The normal post-master's credit requirement is 60 semester hours, 30 of which may be 600 level dissertation credits.

Before the end of their second year in the program, students shall have (1) established a dissertation committee including their adviser and 4 additional members, one of whom must be from a department other than geology; (2) demonstrated competence in at least one research tool (the student's advisory committee will determine the requirements and research tool competence); and (3) presented themselves to the advisory committee for a preliminary written and oral examination. The format of the preliminary examinations shall be established by the faculty and a copy of the procedures may be obtained in the departmental office. Students who fail the preliminary examinations and wish to remain in the program may, with faculty consent, retake the examinations during one of the next two examination periods. Students who fail the second written-oral examination will be dropped from the program. A student having passed the preliminary examinations and having demonstrated competence in at least one research tool as required by the advisory committee, shall be admitted to candidacy for the Ph.D. degree. A second research tool, if required by the advisory committee, must be mastered before the candidate may defend the dissertation.

As a candidate for the degree of Doctor of Philosophy in geology, the student is expected to make normal progress toward the successful completion and presentation of original research. The students must complete all requirements for the degree within a 5 year period after admission to candidacy. Ordinarily, the doctoral student should expect to spend a minimum of 2 years beyond the master's degree, or its equivalent, in residence. Students will be required to present an acceptable dissertation describing original research performed with minimal supervision and deemed by the advisory committee to be of such quality as to merit publication in an appropriate professional journal.* A final oral examination will be held after completion of the doctoral dissertation. This examination will concentrate on the defense of the dissertation but is not restricted to the dissertation topic or area.

Assistantships

Teaching assistantships are awarded and supervised by the Department of Geology. Research assistantships are usually available only from research grants of individual faculty members and are supervised by the faculty member in receipt of the sponsoring grant. Research assistantship awards require prior approval of the assistantship committees of the department.

As a matter of policy, the Department of Geology does not ordinarily provide any student working for a master's degree financial support for more than two years. A Ph.D. candidate will not ordinarily be supported for more than 3 years post master's or master's equivalent. Requests for relaxation of this policy must be made in writing to the department chair.

* Two research tools are required. The research tool is a practical knowledge of a foreign language or a computer language.

Courses (GEOL)

Courses with a laboratory may require purchase of a laboratory manual and a supply fee. All courses requiring field trips may have a field trip fee of \$2 to \$7.

412-3 Topics in Igneous Petrology and Geology. In-depth studies of selected topics in igneous petrology and igneous geology. The selected topics will emphasize theoretical considerations, experimental considerations and field associations of a variety of igneous rock types. Lecture, discussion sessions and laboratory. Prerequisite: 315, 415.

413-3 Quantitative Methods of Geology. An introduction to quantitative methods in a geological and earth sciences context. Topics introduced include sampling plans for geologic studies, non-parametric test of geological data, comparisons of geological samples, analysis of sequential geological data. Laboratories will deal with numerical examples from all areas of geology. Prerequisite: advanced standing and consent of instructor.

414-3 Paleobotany. (See Plant Biology 414.)

415-3 Optical Mineralogy. The optical properties of minerals and the use of the petrographic microscope for identification of crystals by the immersion method and by thin section. Lecture, lab. Prerequisite: 310, Physics 203b or 205b.

417-3 Isotope Geochemistry. Stable and radioactive isotopes and the applications of isotopic studies to igneous and metamorphic petrology, ore deposits, sedimentology, surface processes, geothermometry and geochronology. Introduction to isotopic techniques and mass spectroscopy. Laboratory or research project required. Prerequisite: 310, 315 and 325 or consent. Recommended: Physics 203, Mathematics 150 and Geology 419.

418-3 Low Temperature Geochemistry. The application of chemical principles to geologic processes that occur on and near the earth's surface. Lecture, laboratory. Prerequisite: 310, Chemistry 200, 201, 210, 211 or equivalent.

419-4 Ore Deposits. The geological and other factors that govern the exploration for and occurrence of metalliferous mineral deposits. Study of the geological settings of the major types of ore deposits. Lecture, laboratories and field trips. Prerequisite: 302, 315.

420-3 Petroleum Geology. The geological occurrences of petroleum including origin, migration, and accumulation; a survey of exploration methods, and production problems and techniques. Laboratory study applies geological knowledge to the search for and production of petroleum and natural gas. Prerequisite: 221, 302.

421-3 Organic Geochemistry. The nature, origin and fate of natural and artificial organic materials in rocks and sediments. Topics include characterization of fossil fuels using biological marker compounds, petroleum source rock evaluation, and organic pollutants in the environment. Prerequisite: 325 or consent of instructor.

425-4 Invertebrate Paleontology. Principles of paleontology and a survey of the important invertebrate phyla and their fossil representatives. Laboratory. Field trips required. Prerequisite: 221, a biology course.

428-3 Paleocology and Environments of Deposition. Characteristics, distribution, and

classification of recent and ancient environments. Criteria for recognizing ancient environments. Sedimentological and paleoecological approaches. Recognition of ancient environments and environmental associations. Lab. Field trips required. Prerequisite: 425, 325 or concurrent enrollment.

434-3 Engineering and Environmental Geophysics. Geophysical methods used in engineering and environmental site characterization and assessment and the geophysical detection of environmental hazards. Field trips required. Prerequisite: Physics 203a or 205a, 203b or 205b, Mathematics 150.

435-3 Solid-Earth Geophysics. Earth's size, shape, mass, age, composition, and internal structure are reviewed in detail as understood from its volcanism, gravity and magnetic fields, seismicity and motion of continents and ocean basins; plate tectonics. Prerequisite: 302, Mathematics 150 or consent of instructor.

436-4 Elementary Exploration Geophysics. Theory and practice of geophysics as applied to the exploration and development of natural resources. Laboratory involves use of geophysical instruments and interpretation of data. Field trips required. Prerequisite: 220, Mathematics 150.

437-3 Field Course in Geophysics. Use of geophysical equipment for collection, analysis and interpretation of seismic, gravity, magnetic, electrical and other types of geophysical data. Prerequisite: 436 or consent.

440-1 to 4 Advanced Topics in the Geological Sciences. Individual study or research or advanced studies in various topics. Prerequisite: advanced standing and consent of instructor.

445-3 Museum Studies in Geology. History, nature and purpose of geology in museums, relationships of geology to other museum disciplines, application of geologic methods to museum functions, preparation and preservation of specimens; nature, acquisition and utilization of geologic collections in museums, role of research in museums.

450-2 Introduction to Field Geology. Introduction to field techniques, principles of geologic mapping and map interpretation. Field trip fee \$5.00. Prerequisite: 302, 315 or concurrent enrollment.

454-6 Field Geology. Advanced field mapping in the Rocky Mountains, including problems in stratigraphy, structure, petrology, paleontology, geomorphology, and economic geology. Transportation cost approximately \$150, supplies \$6. Prerequisite: 302, 315; 450 recommended.

460-3 Geological Data Processing. Computer applications to geological problems including the processing and programming of data and the interpretation and evaluation of results. Lecture, laboratory. Prerequisite: Engineering 222 or Computer Science 202.

462-3 Fundamentals of Structural Geology II. Intermediate topics in structural geology including strain theory, field strain analysis, geometry of complex mesoscopic structures and intro-

duction to dislocations, deformation history and microfabric analysis. Hypotheses and orogenesis are discussed and evaluated. Lecture and assigned problems only. Prerequisite: 302 or equivalent.

466-3 Tectonics. Fundamentals of geodynamics applied to plate tectonics: mantle composition and rheology, deformation of the lithosphere, structural characteristics of plate margins, stability of triple junctions, diachronous tectonics, and orogenesis will be examined in detail. Prerequisite: 302, Mathematics 150 or consent of instructor.

470-3 Hydrogeology. A problem-solving oriented course which covers the analysis and interpretation of the distribution, origin, movement and chemistry of ground water. Laboratory. Prerequisite: 220, Mathematics 250.

474-3 Geomorphology. Study of erosional and depositional processes operating at the earth's surface and landforms resulting from these processes. Relationship of processes and landforms to the geologic framework is examined. Laboratory. Prerequisite: 220.

476-3 Quaternary Geology. Methods used to identify, map, date and correlate Quaternary deposits and interpret Quaternary history. Covers glacial, fluvial, coastal, lacustrine and eolian chronologies, oxygen-isotope records from ocean sediments and continental ice cores, volcanic activity and Quaternary climate change. Field trips required. Prerequisite: 220, 221 or consent of instructor; 474 recommended.

478-4 Environmental Geology. Application of principles of geomorphology and Quaternary geology to environmental problems and geologic hazards. Lectures and case studies emphasize neotectonics, volcanic hazards, landslides and other mass movements, floods, river channel changes and coastal erosion. Laboratory exercises focus on techniques for identification, mapping and analysis of geologic hazards. Prerequisite: 474. Geology 476 recommended.

480-3 Geology of Coal. Geology as related to exploration, development and mining of coal; stratigraphy, sedimentation and structure of coal deposits; type of coal basins and their tectonic setting; concepts of cyclical deposition in coal basins; origin of splits and partings in coal seams; relationship of modern environments and ancient coal-forming environments; structural problems relevant to exploration and mining of coal; methods of resource evaluation. Three 1-hour lectures/week; five half-day field trips.

481-3 Sedimentary Basin Analysis. The use of stratigraphy, structure, sedimentology and geophysics to determine the paleogeographic evolution of sedimentary basins. Topics include the study of the relationships between host strata and both primary and post-depositional non-renewable resources, plate tectonics and basin evolution and subsurface geologic methods. Prerequisite: consent of instructor.

482-3 Coal Petrology. Structural features and microscopy of coal seams. Origin and alteration of coal constituents. Includes field trips, study of coal specimens and techniques. Prerequisite: 220 and 221 or consent of instructor.

500-1 to 2 Teaching for Geology Graduate Students. To help teaching assistants develop

skills in conducting laboratory work and leading discussions. One hour required for all teaching assistants in geology. Graded *S/U* only.

510-2 Advanced Sedimentology. Basic principles of field observation, field and laboratory sampling, and data analysis of clastic sedimentary rocks; introduction to laboratory techniques; introduction to statistical, physical and empirical models in sedimentary geology. Field trips required. Prerequisite: 325 or 474.

515-3 Instrumental Analysis in Geology. An introduction to modern methods of instrumental inorganic geochemical analysis that are particularly important in the geology sciences. This includes both operational theory and practical application of methods for the analysis of minerals, rocks and aqueous solutions. Lecture, laboratory. Prerequisite: 310, Chemistry 222 or equivalent, and consent of instructor; 418 recommended.

517-2 to 9 (2 to 6 per semester) Advanced Topics in Geochemistry. Specialized topics in geochemistry. Topics covered might include thermodynamic modeling of mineral-solution equilibria, the role of kinetics in mineral-solution reactions, experimental hydrothermal geochemistry or other topics to be announced by the department. Maximum credit nine semester hours. Prerequisite: 418 or consent of instructor.

518-3 Clay Mineralogy. Study of the structure, chemistry, origin, and geologic importance of clay minerals. Industrial and other applications of clays. Lecture, laboratory. Prerequisite: 310 or consent.

520-2 to 9 (2 to 6 per semester) Advanced Topics in Igneous and Metamorphic Petrology. Petrologic principles and their relationships and other selected topics to be announced by the department. Prerequisite: consent of instructor.

522-3 Sedimentary Petrology—Siliciclastics. The petrography and petrology of siliciclastic rocks, emphasizing sandstone. Microscopic studies of composition and components of detrital clastic rocks, their origin, provenance, characteristics, diagenesis, cementation and lithification. Prerequisite: 325 or 415 or consent; 520 or 521 recommended.

523-3 Sedimentary Petrology—Carbonates. The origin, classification, diagenesis, and geochemistry of carbonate rocks, with emphasis on petrographic analysis. Study of recent carbonate depositional environments. Laboratory required. Prerequisite: 325, 418 recommended.

524-2 to 9 (2 to 6 per semester) Advanced Topics in Sedimentary Geology. Advanced topics in sedimentary geology. Topics may include clastic depositional environments, carbonate depositional environments; diagenesis of sedimentary rocks, and other topics to be announced by the department. Prerequisite: 428 or 522 or 523 or consent of instructor.

525-2 to 6 (2 to 3 per semester) Advanced Topics in Invertebrate Paleontology. Lectures, readings, field and laboratory studies, including techniques and quantitative methods of study. Preparation for research in paleontology. Topics may include corals, bryozoans, brachiopods, mollusks, echinoderms, biostratigraphy, tempo and mode of invertebrate evolution and other topics to be announced by the department.

Maximum credit six semester hours. Prerequisite: 425 or consent of instructor.

526-3 Advanced Topics in Applied Paleocology. Lectures, field, and laboratory studies, including techniques and quantitative methods. Preparation for research in paleocology. Emphasis on using fossil marine invertebrates and trace fossils to interpret ancient sedimentary environments. Prerequisite: 428 or consent.

535-1 to 9 (1 to 6 per semester) Advanced Topics in Geophysics. Specialized topics in geophysics. Examples include but are not limited to seismic stratigraphy, mid-continent seismicity, isostasy, data processing techniques. The topic to be covered is announced by the department. Maximum credit nine semester hours. Prerequisite: 435 or 436 or consent of instructor.

536-3 Earthquake Seismology. Observational seismology. Topics include earthquake source mechanisms; propagation, reflection and refraction of elastic waves; ray theory; dispersion of surface waves; the effect of earth structure on the seismogram; and the seismograph. Research projects will be conducted using data from the SIU Geophysical Observatory. Prerequisite: 435 or 436, Mathematics 150 or consent of instructor.

537-3 Applied Seismology. Study of the seismic reflection techniques, including theory and methods of collection and analysis of seismic reflection data, the seismic method, waveform analysis, and digital filtering with computer applications and seismic instrument characteristics. Prerequisite: Mathematics 150 or consent.

538-6 (3,3) Gravity and Magnetism. (a) Gravity. Study of gravitational methods used in the solution of geological problems; topics include theory, field operations, data reduction, anomaly separation, two and three-dimensional analysis, and interpretation. **(b) Magnetism.** Study of magnetic methods used in the solution of geological problems; topics include theory, origin, time variations and induction, paleomagnetism, magnetic properties of earth materials. Field operations, anomaly separation, and interpretation. Prerequisite: 435 or 436, Mathematics 150 or consent of instructor.

550-4 Advanced Economic Geology. In-depth examination of the geologic characteristics, classification and origin of metallic mineral deposits. Aspects of mineral exploration and mining techniques are also discussed. Laboratory exercises emphasize hand specimen and petrographic study of ore and host rock suites. Field trips required.

555-1 to 6 (1 to 3 per semester) Advanced Topics in Economic Geology. Advanced study in a specific area of economic geology to be determined by course participants. Course content may focus on a specific type of mineral deposit or such topical areas as field characteristics, mineral exploration techniques, stable isotope geochemistry, fluid inclusion studies and hydrothermal processes. Maximum six credit hours. Prerequisite: 550.

565-3 Rock Deformation and Structural Systems. Advanced topics in structural geology with emphasis on theoretical and experimental study of rock deformation and analysis of complex structural systems. Lecture and assigned problems only. Prerequisite: 462.

566-3 Advanced Topics in Structural Geology. Lectures, readings, and discussion of advanced aspects of rock deformation: dislocation theory and its applications to flow processes of rocks; experimental rock deformation; incremental and finite strain theory and analysis; and recent developments in structural geology. Prerequisite: 565.

570-3 Advanced Hydrogeology. A combination of lectures, seminars, and independent studies of advanced topics in hydrogeology, particularly geochemistry and the response of aquifers to stresses such as tides, recharge and saline intrusion. Prerequisite: 470.

576-3 Coastal Geomorphology and Sedimentology. Detailed examination of coastal processes and clastic coastal depositional systems. Coastal storms, wave processes, tidal systems, sea level changes, coastal sediment transport, deltaic, barrier island-strandplain, estuarine depositional systems and coastal stratigraphic sequences. Field trip to Louisiana and Texas Gulf Coast. Field trip fee of \$25 may be incurred. Prerequisite: 474 or consent of instructor.

577-2 to 9 (2 to 6 per semester) Advanced Topics in Surficial Geology. Studies of processes, landforms, and deposits in the surface or near surface geologic setting. Selected topics to be announced by the department. Maximum credit nine semester hours. Prerequisite: consent of instructor.

578-3 Fluvial Geomorphology. Detailed study of fluvial processes and landforms within the context of major concepts in geology and geomorphology. Topics include drainage basins, hydro-climatology and surface water hydrology, channel processes, fluvial depositional systems, paleohydrology and changes in fluvial systems through time. Prerequisite: 474 and consent instructor.

579-3 Soil Geomorphology. Study of geomorphologic applications of soils. Covers the effects of time, climate, parent material, topography, eolian additions on soil development, classification and chemistry; soil indices; pedogenic thresholds; paleosols; use of soils to evaluate landform age, landform stability, Quaternary stratigraphy, faulting and climate fluctuations. Field trips required. Prerequisite: 474 or consent of instructor.

582-1 to 6 (1 to 3 per semester) Advanced Coal Petrology. Microscopy, source materials, coalification, constitution, and classification of peats, lignites, bituminous coal, anthracite; applications to industrial problems. Prerequisite: 482.

591-1 to 6 Individual Research in Geology. Investigations in geology other than those for theses or dissertations.

599-1 to 6 Thesis. Minimum of three hours to be counted toward a Master's degree.

600-1 to 30 (1 to 16 per semester) Dissertation. Research for and writing of the doctoral dissertation. Prerequisite: consent of instructor.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concur-

rent enrollment in any other course is not permit-

ted. Graded *S/U* or *DEF* only.

Health Education

E-mail: ge1840@siucvmb.siu.edu

COLLEGE OF EDUCATION

Aaron, James E., Professor, *Emeritus*, Ed.D., New York University, 1960; 1957.

Blasini-Caceres, Lydia, Assistant Professor, Ph.D., Pennsylvania State University, 1993; 1994. HIV/AIDS prevention, community-based organizations/public health, curriculum design, cross-cultural diversity, needs assessment, school supervision and administration, bilingual education.

Boydston, Donald N., Professor, *Emeritus*, Ed.D., Columbia University, 1949; 1955.

Bridges, A. Frank, Professor, *Emeritus*, D.H.S., Indiana University, 1952; 1947.

Drolet, Judy C., Professor, Ph.D., University of Oregon, 1982; 1982. Human sexuality, sexuality education, mental health, drug education, professional preparation, foundations of health education.

Grissom, Deward K., Professor, *Emeritus*, Ed.D., Columbia University, 1952; 1956.

Kittleson, Mark J., Associate Professor, Ph.D., University of Akron, 1986; 1989. AIDS, health care program planning, stress management, research design, vital statistics, and teaching strategies.

Lacey, Ella P., Associate Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1979; 1979.

LeFevre, John R., Professor, *Emeritus*, Ed.D., Teachers College, Columbia University, 1950; 1955.

Ogletree, Roberta J., Assistant Professor, H.S.D., Indiana University, 1991; 1991. Women's health, human sexuality, AIDS and other STDs, curriculum development, professional preparation, health issues in aging.

Phillips, Frances K., Associate Professor, *Emerita*, M.A., Columbia University, 1940; 1944.

Richardson, Charles E., Professor, *Emeritus*, Ed.D., University of California, Los Angeles, 1959; 1954.

Ritzel, Dale O., Professor, Ph.D., Southern Illinois University at Carbondale, 1970; 1966. Injury control, occupational health and safety, computer applications, research design, child safety.

Russell, Robert D., Professor, Ed.D., Stanford University, 1954; 1965. Positive holistic health, multicultural and ecological perspectives, human/spiritual interacting, death education, philosophies of health and health education, qualitative research, non-traditional thinking in health.

Sarvela, Paul D., Professor, Ph.D., University of Michigan, 1984; 1986. Program evaluation, community health and epidemiology, needs assessment and strategic planning.

Sliepcevich, Elena M., Professor, *Emerita*, D.P.E., Springfield College, 1955; 1973.

Vitello, Elaine M., Professor, Ph.D., Southern Illinois University at Carbondale, 1977; 1977. Community health, content analysis, health care services, health care advertising and marketing, professional preparation.

Welshimer, Kathleen J., Assistant Professor, Ph.D., University of North Carolina at Chapel Hill, 1990; 1990. Community organizing, pregnancy and women's health, stress and social support, social-psychological and anthropological perspectives, decision making, and perceived health risk.

Zunich, Eileen M., Assistant Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1970; 1967.

The Department of Health Education and Recreation offers a graduate program leading to the Master of Science in Education degree. Persons interested in pursuing course work in school health education, community health education, or occupational and environmental health should initially consult the department chair regarding appropriate courses and assignment to an adviser.

Application/Admission. Requirements for admission to the master's degree program in health education are:

1. Completion and submission of Graduate School admission application; A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.
2. Completion and submission of Department of Health Education and Recreation admission application that includes a 300–500 word statement regarding experience, career goals, and research interests.
3. Submission of three letters of recommendation.
4. Submission of Miller Analogies Test (MAT) score. The MAT is available through the Testing Center on the SIUC campus and is available also

throughout the U.S. through testing centers on university or college campuses. Testing schedules and fees vary among testing centers.

5. Submission of **all** official transcripts for previous undergraduate and graduate work.

All specified application materials must be submitted directly to the Department of Health Education and Recreation, Southern Illinois University at Carbondale, Carbondale, Illinois 62901-4632. Further information may be obtained by calling 618-453-2777.

Application deadline for summer and fall admission is February 15; application deadline for spring admission is September 15.

Master of Science in Education Degree

Applicants for the master's degree must have a 2.70 undergraduate grade point average (A = 4.0) to be admitted in good standing.

Only graduate level courses taken after a student's admission will be included automatically in the student's degree program. "Unclassified" hours or hours from other degree programs must be petitioned into the program. Courses eligible for inclusion in a degree program must be graduate level and cannot have been applied toward another degree.

An applicant with an undergraduate grade point average below 2.70 but above 2.40 may petition the department for conditional admission. For these students, the following will apply:

1. A student must take 12 hours of graduate level work in health education with a grade point average of at least a 3.5. If then admitted to health education, the student will be allowed to apply no more than 6 of those semester hours toward degree requirements.
2. Health Education 533a and 533b cannot be taken until a student is formally admitted to the graduate program in health education.

For potential health education graduate students with an undergraduate grade point average of 2.70 or better who are taking courses as unclassified students, the following will apply:

1. No more than 6 hours of graduate credit can be applied toward the master's degree in health education.
2. Health Education 533a and 533b cannot be taken until a student is formally admitted to the graduate program in health education.

M.S. Degree Requirements

A student must complete a minimum of 40 semester hours with the following core courses (26-29 hours) being required:

HED 401-3 Epidemiological Approaches to Disease Prevention and Control

EPSY 402-3 Basic Statistics (or equivalent)

HED 491-3 Health Teaching/Learning: School and Community

HED 500-3 Community Organization for Health Education

HED 526-3 Evaluative Approaches to Health Education

HED 533a-4 Foundations of Health Education I

HED 533b-4 Foundations of Health Education II

HED 599-3 to 6 Thesis

Each student will work with an adviser to select an additional 11-14 hours from courses within the Department of Health Education and Recreation or related courses from other departments.

With adviser approval, HED 491-3 may be waived if the student has completed a health education methods course as an undergraduate student or in another graduate program or provides evidence of formal teaching experience.

Doctor of Philosophy Degree in Education

The Department of Health Education and Recreation participates in the doctoral program with a concentration in health education. Other than general requirements of the Graduate School for all Ph.D. degrees and of the College of Education for all Ph.D. degrees in education, the Department of Health Education and Recreation requires satisfactory completion of HED 533a and 533b and HED 597a and 597b. Other courses are required in community health and school health according to the concentration. Programs are individually developed with each student. A demonstration of competency in educational statistics or successful completion of Educational Psychology 506 and 507 is required for doctoral students in the Department of Health Education and Recreation.

See the description of the Ph.D. degree in education in this chapter for further details.

Inquiries regarding application should be directed to the chair of the Department of Health Education and Recreation.

Courses (HED)

400E-2 to 3 Health Appraisal of School Children-Special Topics. Includes the screening, testing and evaluation for numerous health conditions related to hearing, vision, the cardiovascular system, skin, spine and such diseases as diabetes, tuberculosis, herpes and other such ailments. Included will be classroom lectures and presentations, a supervised practicum and all students will develop a viable program in a particular problem area in a public school program.

401-3 Epidemiological Approaches to Disease Prevention and Control. Principles and practices in the cause, prevention and control of diseases in various community settings.

402-3 Death Education. Designed to prepare educators to conduct learning experiences about death and dying in a variety of school, college, medical care, and community settings. Stress will be placed on developing brief, functional curricula and usable, imaginative teaching-learning materials and on evaluating resource materials for use in educating at various levels of maturity.

403-3 Health Advocate Training. Provides students with knowledge and skills in the areas of peer health education, health advocacy and referral. Instruction includes health care information from a wellness point of view. Prepares students for practicum in health advocate program. Credit will not count toward a Master's degree in health education. Prerequisite: consent of instructor.

405-3 Sex Education. Examines various programs of sex and family life education in schools, recognizing a range of community attitudes.

407-3 Drug Education. Meets requirements of Illinois state law for education concerning drugs including alcohol for grades K-12. Explores motivations behind use and abuse of drugs. Offers experiences in development of curriculum and teaching approaches and material.

410-3 Human Sexuality. Provides detailed in-depth information on such topics as philosophical views of sexual behavior, sex techniques, sex therapy, sexual variations, sexual anatomy and physiology, including the sexual response and changes with age and sexual development in childhood.

411-6 Emergency Medical Technician in the Wilderness. Placement of trained emergency medical technicians into a wilderness situation and having them adopt previously learned skills and newly developed skills. Prerequisite: 310 or 434.

430-3 Health and Injury Control in A Work Setting. (Same as Industrial Technology 430.) Assesses the health and injury control programs present in a work setting. Emphasis given to employee programs in health, wellness and injury control that are effective. Field trips to work sites are included.

434-4 Advanced First Aid and Emergency Care. Meets the needs of those in positions where a complexity of first aid emergency care procedures are needed. American Red Cross and American Heart Association certification may be obtained. Materials purchased from the American Red Cross and/or the American Heart Association are required in this course. Consent of instructor required.

440-3 Health Issues in Aging. Students enrolled in the course will be involved in a wide variety of learning activities focusing on health needs of the elderly. The course is designed for students who have a special interest in health implications of aging.

441-3 Women's Health. The course deals with a wide variety of health concerns of American women as consumer in the current health marketplace. Major categories of topics include health products, health services and sources of health information of particular interest to women. Emphasis is also placed on current health related issues of women. The major purpose of the course is to provide a basis for informed decision-making by the female consumer.

442S-5 Driver and Traffic Safety Education — Practicum. Provides prospective teachers with simulation, range, and on-road teaching experience with beginning drivers. Students may be required to purchase materials not to exceed \$15. Prerequisite: 302S.

443S-3 Driver and Traffic Safety Education — Program Administration. Emphasizes administration, reimbursement, scheduling, public

relations, planning and evaluation of driver education. Prerequisite: 442s or consent of instructor.

444-3 Modern Gerontology. This multidisciplinary course in gerontology is a survey of various disciplines which contribute to a body of knowledge vital to working, performing research and teaching in an aging society.

445-3 Advanced Driver Education Instructor Training. Prepares prospective instructors of advanced driving techniques. Emphasis is placed upon safe driving practices, vehicle dynamics, emergency vehicle operation, in-car response to simulated driving emergencies and instructional techniques. Prerequisite: consent of instructor.

446-4 Motorcycle Rider Education Instructor Training. Provides prospective teachers with on-cycle teaching experience with beginner riders. Addresses program administration, scheduling, public information techniques, equipment procurement, evaluation and instructional technology. Certification as Motorcycle Rider Course Instructor can be obtained. Materials purchased from the Motorcycle Safety Foundation are required in this course. Prerequisite: consent of instructor.

450-3 Health Programs in Elementary Schools. Orientation of teachers to health programs and learning strategies. Designed for elementary education majors.

455-3 Computer Applications in Health Education. Designed for students with little or no previous experience with computers. The course will be applications oriented, with an introduction to the potential uses of computers in the field of health education.

461-1 to 12 Health Education Workshop. A different focal theme each year; e.g., mood modifying substances, ecology, human sexuality, emotional and social health dimensions. Information, ideas, and concepts are translated into teaching-learning materials and approaches; continuing opportunity for interaction between prospective and experienced teachers.

470S-3 Highway Safety as Related to Alcohol and Other Drugs. Relationship between alcohol and other drugs and traffic accident causes. A review of education programs designed to minimize drug related accidents. Prerequisite: advanced standing or consent of instructor.

471-2 Health Education Instructional Strategies. This course is designed for graduate students who are teaching assistants in the Department of Health Education. The purpose of the course is to enhance professional skills of those who are responsible for teaching health education, general education and first aid.

480S-3 Traffic and Driver Education Program Development. Acquaints students with curriculum innovation, current philosophy, learning and teaching theories, and instructional designs. Students will develop learning packages and modules. Prerequisite: 443s or consent of instructor.

483-3 Community Health Administration in the United States. Background and development of community health administration structures in the United States; the dynamics and trends evolving from current health and medical care programs and practices. Prerequisite: 355.

485-3 International Health. Health beliefs, values and practices of peoples in various cultures as related to a total way of life of potential value to both prospective teachers and students in other fields.

488-3 Environmental Dimensions of Health Education. Application of the principles of learning to understanding people interacting with their environment. Emphasis placed upon individual and community responsibilities for promoting environmental health. Rural and municipal sanitation programs and practices are included.

489-3 Introduction to Vital Statistics. An introduction to bio-statistics; examination of theories of population projections; collection, organization, interpretation, summarization and evaluation of data relative to biological happenings with emphasis on graphic presentation.

490-2 to 6 Field Experiences in School, Community Health or Safety Education. Field observation, participation and evaluation of current school or community health education or safety programs in agencies relevant to student interests. Prerequisite: consent of instructor.

491-3 Health Teaching/Learning: School and Community. Teaching and learning strategies at secondary school levels and in other community group settings. Opportunities to examine and observe a variety of educational strategies applicable to health education.

496-4 Industrial Hygiene. Provides a background in the recognition, evaluation and control of toxic materials and hazardous physical agents in the work environment. Prerequisite: consent of instructor.

499-3 Rx: Education in Health Care Settings. Designed for members and potential members of the health care team to explore educational concepts and strategies applicable to a variety of health care settings. Includes rights and responsibilities of consumer and professional, determinants of health behavior, contrasting models of health care, communication skills, media and materials and planning, implementing and evaluating educational programs. Open to medical and dental personnel, nurses, health educators, dietitians, therapists, pharmacists, social workers and related professionals.

500-3 Community Organization for Health Education. Theory and practices in community organization for health education; group work methods and leadership theories are explored. Field observations required.

510-3 Curriculum in Health Education. Analyzes the significance of current trends in curriculum theory and design; develops objectives, content, learning approaches, resource teaching-learning materials; and evaluation as components of a curriculum guide.

511-3 Health Education Conference Practicum. A summer practicum course taken in conjunction with 461, 462 or 463. Participants help plan the conference, analyze activities, suggest alternatives, assume leadership responsibilities, prepare conference proceedings and design a comparable experience with another focal theme. Prerequisite: consent of instructor.

safety education, examining a variety of professional materials for their relevance to such a framework. Reading, reporting, discussing, and interacting in relation to issues of contemporary and future concerns by conceptualizing health as a process in the realization of individual and societal goals.

520-3 Special Projects in Health Education. Study of problems in health education and safety education culminating in a research paper.

526-3 Evaluative Approaches to Health Education. Survey and analysis of health testing and evaluation procedures, uses and limitations of knowledge and attitude tests, behavioral inventories, check lists, questionnaires, interviews and other techniques.

530S-3 Research in Traffic Safety. A study of unique problems related to traffic safety and a review and evaluation of contemporary studies. Prerequisite: graduate standing or consent of instructor.

533A-4 Foundations of Health Education I. Historical and philosophical foundations of health education dealing with principles of the discipline and preparation for services as a professional. Consideration of theoretical models of health and health education, professional ethical issues and future directions.

533B-4 Foundations of Health Education II. Health education programs and program development and the interrelation of these with research and evaluation. Consideration is given to ethical, legal and political issues affecting health education. Prerequisite: 533a or consent of instructor.

536-3 Professional Preparation in Health Education. Considers national, state and local factors influencing professional preparation, accreditation and certification processes. Emphasis upon influences of official and non-official agencies. Historical perspective, the present status, and future directions of the profession.

540-2 Health Facilities Management. An examination of planning approaches for health facilities and licensure, accreditation and certification, and various operational considerations for health facilities.

541-3 Issues in Health Care. Examination of current and continuing issues in the provision,

administration, financing and regulation of health care services. Prerequisite: 483 or consent of instructor.

550S-3 Current Developments in Traffic and Safety Education. Current problems, trends and research studies in traffic and safety education are reviewed, critiqued and evaluated.

555S-3 Traffic Safety Management. Course deals with highway safety legislation and other acts related to traffic safety. Application of safety management techniques, procedures and structure of federal and state agencies are emphasized. Prerequisite: consent of instructor.

590-8 Practicum in Community Health. Students are assigned full-time to a community health agency for experiences in health education. Restricted to those specializing in community health.

592-8 Practicum in Safety and Industrial Health. Students are assigned full-time to a safety agency or industry for experience in either safety or industrial health. Restricted to those specializing in safety industrial health. Prerequisite: consent of instructor.

597-2 (1,1) Seminar in Health Education. Advanced graduate students discuss individual health projects and present research problems. Each will present a dissertation prospectus.

598-3 Institute: Writing Research Proposals. Consideration is given to funding sources, proposal guidelines, procedures for support, budgetary requirements and evaluation procedures. Students examine different types of funded projects, develop a research prospectus and analyze the art of grantsmanship and political action.

599-1 to 6 Thesis.

600-1 to 32 (1 to 16 per semester) Dissertation.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Higher Education

COLLEGE OF EDUCATION

Casebeer, Arthur L., Professor, *Emeritus*, Ed.D., Oregon State University, 1963; 1969.

Graham, Jack W., Professor, *Emeritus*, Ph.D., Purdue University, 1951; 1951.

Keim, Marybelle C., Associate Professor, Ph.D., Michigan State University, 1972; 1986.

Spees, Emil R., Associate Professor, Ph.D., Claremont Graduate School, 1969; 1969.

Wallace, James A., Jr., Assistant Professor, Ph.D., Texas A&M University, 1993; 1994.

Graduate Study in Higher Education

The Department of Educational Administration and Higher Education provides graduate study leading to the Master of Science in Education degree in higher education.

The graduate program in higher education offers students an opportunity to study and explore the concept of higher education as a field of study. The faculty

of this program encourages and assists students in developing a lifetime commitment to the study of higher education. They also provide pre-service and in-service preparation for persons who are teaching or serving as administrators or who expect to teach or serve as administrators in two-year and four-year colleges and universities, and related post-secondary educational institutions and agencies.

FINANCIAL AID

The Department of Educational Administration and Higher Education assists students in their efforts to find financial support. Graduate assistantships are available throughout the University in different administrative offices and residence halls. Students wishing to expand their administrative and teaching skills through a variety of paid experiences should consult their academic advisers about possible financial assistance, including graduate fellowships and special awards. Since a personal interview is required for most graduate assistantships, applicants should work with departmental faculty to arrange a campus visit as early as possible. A very limited number of paid internships are available through neighboring institutions.

THE MASTER OF SCIENCE IN EDUCATION DEGREE

The Department of Educational Administration and Higher Education offers a program in higher education leading to the Master of Science in Education degree. The emphasis of this degree is to provide individuals with the background and skills important to accepting a wide range of teaching and administrative positions in higher education.

Application. Inquiries requesting application materials should be directed to the chair of the Department of Educational Administration and Higher Education.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Admission and Retention. Students applying for admission are encouraged to have some leadership experience prior to starting graduate study. Students who expect to complete a program to prepare them for teaching in a community college are expected to have an undergraduate major in a subject area commonly taught in a community college.

Each applicant is considered for acceptance to graduate study on an individual basis with much consideration being given to evidence showing the applicant's commitment to the field of higher education as a career.

Each student works closely with an adviser in program preparation. Each student also has a committee that assists in reviewing the student's progress, in supervising the thesis or research paper, and in administering the final examination. The records of each master's degree student are reviewed periodically by the adviser to determine whether the student should continue in the program.

Program Requirements. Students will develop, with their individual adviser, a suitable sequence of courses that will be designed to assist them in attaining academic and professional objectives.

Community Junior College Teaching (32 semester hours, minimum). Students who wish to teach in a community college must complete at least 20 semester hours in their teaching specialty and at least 12 hours in specified courses in educational administration and higher education, for a minimum of at least 32 semester hours. Students in this program must secure prior to admission a sub-

ject matter adviser from the faculty of the subject area who will agree to help plan the student's academic program.

The common core of courses required of students in this program includes the following:

- EAHE 516-3 College Students and College Cultures
- EAHE 518-3 College Teaching
- EAHE 524-3 Curriculum Design and Policy
- EAHE 526-3 The Community College

Students must also complete a minimum of 20 semester hours in their teaching specialty. The adviser will often recommend additional courses to assist the student in meeting special requirements. Recommended courses beyond the minimum requirements are:

- EAHE 500-3 Educational Research Methods
- EAHE 595-2 to 6 Internship or
- EAHE 599-3 Thesis

College Student Personnel (48 semester hours). This program is designed to prepare entry-level and middle management professionals to work in institutions of higher education in the general area of student affairs or student development services. Students must complete a minimum of 48 semester hours in courses designed to prepare them as a generalist in such fields as admissions, alumni relations, career development, financial aid, orientation, placement, residence life, and student activities/programming. Through elective coursework, students may personalize their programs to acquire a specialized emphasis in either student development or administration. Individuals interested in a specialized emphasis in counseling may complete a double major in higher education and in educational psychology.

The common core of courses for this program includes (33 semester hours):

- EPSY 402-3 Basic Statistics (a higher level course may be substituted)
- EAHE 500-3 Educational Research Methods
- EAHE 508-2 Student Development Theories
- EAHE 510-3 Higher Education in the United States
- EAHE 513-3 Organization and Administration in Higher Education
- EAHE 515-3 College Student Development: Operations and Policies
- EAHE 516-3 College Students and College Cultures
- EAHE 535b-2 Higher Education Seminar I: Law and Higher Education
- EAHE 535s-4 Higher Education Seminar I: Professional Seminar in Student Affairs
- EAHE 593/599-3 Individual Research/Thesis
- EAHE 595-3 Internship

The elective coursework, a minimum of 15 hours, may be completed within the department, however, students are encouraged to select courses from multidisciplinary sources in consultation with their adviser. Students must complete the required credit internship in addition to the paid assistantship they secure as part of their admission to the program. It is essential that the credit internship experience be in a setting different than their paid assistantship.

Research Requirements (for all master's degree specializations within higher education). Each student shall demonstrate research competencies through writing an acceptable research paper or master's thesis (involves original research). Students who select the thesis option must have an approved prospectus on file at least 6 months in advance of the anticipated graduation date; they must enroll for 3 hours of EAHE 599, Thesis; and they must have a committee of at least 3 faculty members. Students who elect to write a research paper must have a committee of two faculty members, and are encouraged to enroll for three semester hours of EAHE 593, Individual Research.

Final Examination and Grade Requirements. All master's degree students are required to complete successfully a final examination which usually consists of a defense of the research paper or thesis. The exam may be written or oral or both. Students must complete at least 21 semester hours of graduate credit with grades of A, B, or C in courses graded A through F. Upon successful completion of all requirements, including at least a B average for all course work, the student is recommended to the Graduate School for graduation.

For a list of courses, see Educational Administration.

History

E-mail: griffjan@siu.edu

COLLEGE OF LIBERAL ARTS

Allen, Howard W., Professor, Ph.D., University of Washington, 1959; 1962. United States: 20th century; social science history.

Allen, James Smith, Professor, Ph.D., Tufts University, 1979; 1991. European; Modern: France; social and cultural.

Ammon, Harry, Professor, *Emeritus*, Ph.D., University of Virginia, 1948; 1950.

Barton, H. Arnold, Professor, Ph.D., Princeton University, 1962; 1970. European: 18th century; France; Scandinavia; American immigration.

Batinski, Michael C., Associate Professor, Ph.D., Northwestern University, 1969; 1968. Early America.

Bean, Jonathan J., Assistant Professor, Ph.D., Ohio State University, 1994; 1995. U.S.: Economic and Business.

Bengtson, Dale R., Assistant Professor, Ph.D., Hartford Seminary Foundation, 1971; 1973. History of Religions.

Carr, Kay J., Associate Professor, Ph.D., University of Chicago, 1987; 1989. U.S. Social; 19th century; Illinois, frontier, historical geography.

Carrott, M. Browning, Associate Professor, Ph.D., Northwestern University, 1966; 1967. United States: constitutional and legal.

Chen, Jian, Associate Professor, Ph.D., Southern Illinois University, 1990; 1995. Modern Chinese history: diplomatic.

Conrad, David E., Professor, *Emeritus*, Ph.D., University of Oklahoma, 1962; 1967.

Detwiler, Donald S., Professor, Dr. phil., Goettingen University, Germany, 1961; 1967. European: German and diplomatic; contemporary; the WWII era; historiography.

Dotson, John E., Associate Professor, Ph.D., Johns Hopkins University, 1969; 1970. European: Medieval and Renaissance, Italy; Maritime.

Fladeland, Betty L., Professor, *Emerita*, Ph.D., University of Michigan, 1952; 1962.

Gardiner, C. Harvey, Professor, *Emeritus*, Ph.D., University of Michigan, 1945; 1957.

Gold, Robert L., Professor, *Emeritus*, Ph.D., University of Iowa, 1964; 1965.

Haller, John S., Jr., Professor, Ph.D., University of Maryland, 1968; 1990. U.S. History, Intellectual; history of medicine and pharmacology.

Kuo, Ping-Chia, Professor, *Emeritus*, Ph.D., Harvard University, 1933; 1959.

Lieberman, Robbie, Associate Professor, Ph.D., University of Michigan, 1984; 1991. Contemporary U.S., War and Peace, social movements.

Morgan, Marjorie L., Associate Professor, Ph.D., Tulane University, 1988; 1988. Britain: 18th and 19th centuries; social and cultural.

Murphy, James B., Associate Professor, *Emeritus*, Ph.D., Louisiana State University, 1968; 1968.

O'Day, Edward J., Associate Professor, A.M., Indiana University, 1956; 1962. European: diplomatic; 20th century; Ireland; American immigration.

Shelby, Lon R., Professor, *Emeritus*, Ph.D., University of North Carolina, 1962; 1961.

Simon, John Y., Professor, Ph.D., Harvard University, 1961; 1964. United States: Civil War and Reconstruction; Illinois; women.

Stocking, Rachel, Assistant Professor, Ph.D., Stanford University, 1994; 1994. European: Ancient and early medieval; cultural and political; Spain.

Thompson, Julius E., Associate Professor, Ph.D., Princeton University, 1973; 1989. American and African-American History; modern Africa.

Vyverberg, Henry S., Professor, *Emeritus*, Ph.D., Harvard University, 1950; 1968.

Weeks, Theodore R., Assistant Professor, Ph.D., University of California, Berkeley, 1992; 1993. Russia/USSR, East Central Europe: cultural and political; Nationalism.

Werlich, David P., Professor and *Chair*, Ph.D., University of Minnesota, 1968; 1968. Latin American: Andean region.

Wilson, David L., Associate Professor and *Director* of Graduate Studies, Ph.D., University of Tennessee, 1974; 1974.; United States: foreign relations.

Wu, Tien-Wei, Professor, *Emeritus*, Ph.D., University of Maryland, 1965; 1972.

The Department of History offers graduate programs leading to the Master of Arts and Doctor of Philosophy degrees.

Research Facilities

Morris Library on the campus is the fourth largest library in Illinois. Housed in a modern seven-story building, it contains more than 2 million volumes and is growing at a rate of over 60,000 items per year. Morris Library acquires current scholarly publications not only from United States but also from Latin America and European publishers. The long-term use of highly specialized materials is afforded by the affiliation of Morris Library with the Center for Research Libraries in Chicago.

The holdings in history and related areas amount to more than 500,000 volumes. To these must be added 20,000 reels of microfilm containing printed secondary works and 6,000 volumes of printed source material and 30,000 volumes of early American imprints prior to 1800 on microtext. Among the materials in the process of acquisition is a microtext edition of all newspapers published in the United States prior to 1820.

The library also possesses substantial holdings in the form of microfilm editions of presidential papers, dispatches and instructions of the state department since 1789, massive holdings in consular records, and the Adams family papers. The library has been a complete repository of United States government documents since 1954 and holds a large collection of earlier documents, including a virtually complete Congressional set. With the publication of the Ulysses S. Grant papers by the Southern Illinois University Press and the location of the Grant Association on the campus, the library is acquiring what will become the country's leading collection of Grant books and correspondence.

Following the acquisition of the 7,000-volume library of Jose Morgrovejo Carrion of Ecuador in 1960, the library has systematically expanded its holdings in Latin American history, government, literature, and anthropology. The papers of Vasquez Gomez, Mexican vice-president (1907–1919), and Samuel Putnam, American expert on Latin American affairs, provide rich research opportunities. Extensive files of serial publications from Argentina, Bolivia, Paraguay, Uruguay, Cuba, and Mexico also contain diverse sources for investigation. Many of the above materials are unavailable elsewhere in the United States.

Holdings in European history include the standard documentary publications, as well as scholarly serials and journals. The materials to support research are strongest in modern German and English history.

Admission

Graduate work in history is offered at both the master's and the doctoral levels. Admission to programs administered by the Department of History must be approved by the department, with approval dependent upon the preparation, ability, and promise of the individual student.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

M.A.: for the Master of Arts degree major in history, the department's admission requirements are those of the Graduate School plus applicants must provide a report of the result of the general test of the Graduate Record Examination. Students admitted with a GPA of less than 2.7 must establish a 3.00 GPA in history courses in the first semester. The department reserves the right to terminate from the history program a student who does not establish and maintain a 3.00 GPA in history courses.

Ph.D.: for admission to the doctoral program, each applicant should submit to the department, in addition to the material required by the Graduate School, the following: three letters from former teachers, preferably at the graduate level; a

letter in which the applicant expresses professional and personal objectives; and a report of the result of the general test of the Graduate Record Examination.

Requirements for the Master of Arts Degree

Two programs of study lead to the M.A. degree in history: the thesis and two-field options. The thesis option requires a thesis which demonstrates the candidate's capacity to carry out independent and original research. A candidate in the thesis program should, with the approval of the director of graduate studies, select a thesis adviser and a thesis topic by the end of the first full-time semester in the program. As many as six semester hours may be taken in thesis research.

A candidate must submit an acceptable thesis and pass a comprehensive oral examination covering the selected field of concentration and the candidate in the thesis program must take at least one research seminar in which a paper will be written.

A candidate in the two-field program must complete two research papers with a grade of *A* or *B*. These papers are normally to be prepared in the department's regularly scheduled research seminars. A copy of one paper must be filed with the Graduate School; copies of both papers must be filed with the department. Each candidate is required to pass a comprehensive written examination conducted by a committee consisting of three persons. The examination will cover two fields chosen in consultation with the candidate's committee from the following list.

United States to 1877

United States, 1865 to present

Latin America, Colonial

Latin America, National

Europe, Mediaeval

Europe, early modern

Europe, modern

England, modern

East Asia

History may be chosen as a minor when a student's program of study allows for a graduate minor or as a teaching specialty for the Master of Science in Education degree major with a major in secondary education or higher education.

Students enrolled in the Master of Arts degree program must consult with the director of graduate studies in the Department of History before registering for courses. Students enrolled in either of the Master of Science in Education degree programs must consult the history director of graduate studies and the appropriate department in the College of Education before registration.

For the Master of Arts degree major in history, 30 semester hours of satisfactory graduate work are required; at least 18 of these 30 hours must be on the 500 level. Within this general requirement, at least 20 semester hours must be in appropriate history courses, with at least 10 of the 20 hours on the 500 level. The remainder of the hours may be taken in courses on the 400 level.

All candidates for the Master of Arts degree must satisfy the requirement for a research tool by demonstrating proficiency in a foreign language or in quantitative methods (statistics, computer programming, or data management).

The language research tool option may be fulfilled either by passing Foreign Language 488 with a grade of *A* or *B*, or by achieving a satisfactory score on the Graduate School foreign language test, or by special testing arrangements made between the student, the director of graduate studies, and the student's adviser.

Graduate students may demonstrate proficiency in quantitative methods by passing two courses with a grade of *A* or *B*, from among the following: EPSY 506 and 507; POLS 503a and 503b and; MATH 516a and 516b. The courses selected will be determined in consultation among the student, the student's adviser, and the director of graduate studies. With the consent of the director of graduate studies, other courses in statistics and computer science may be accepted in fulfillment of the research tool requirement. None of the courses used to satisfy the

research tool requirement may be counted as part of the thirty semester hours of graduate work required for a master's degree.

The Doctor of Philosophy Degree

A student seeking the Ph.D. degree in historical studies must pass preliminary examinations and submit a satisfactory dissertation which involves independent and original research. In preparing for preliminary examinations, a doctoral student must complete at least 24 hours of credit on campus within a period not to exceed four calendar years before being admitted to candidacy. The courses and hours of credit necessary for a doctoral student to prepare for preliminary examinations will be determined by the student's advisory committee and must include successful completion of four colloquia or research seminars with grades of *A* or *B* in which at least two major papers are prepared. The goal is to develop high competence in the selected fields in which the student will be examined. Students are responsible for preparing five fields, one of which may be outside the field of history. Three of the five fields will be in the broad areas of United States, European, Latin American, or Asian history encompassing major historical periods; two of the fields will emphasize depth of preparation rather than breadth and will normally involve shorter time periods or topical specialties. A list of Ph.D. degree fields reflecting the current expertise of the faculty and approved by the department's graduate studies committee will be kept on file in the office of the director of graduate studies and the department chair. Examinations will cover four fields and the student can be certified as proficient in the fifth field, providing that all courses taken in preparation for that field are passed with grades of *A* or *B*. Full-time Ph.D. students who have not passed their preliminary examinations must take, in each semester, at least six semester hours of graded courses, at least three of which must be on the 500 level. Dissertation hours may be taken prior to admission to candidacy only with the approval of the graduate studies committee.

The department requires all candidates to pass a reading examination in two foreign languages. With the approval of the department, quantitative methods, (statistics, computer programming, or data management) may be substituted for one language. Procedures for demonstrating proficiency in foreign language or quantitative methods are the same as those required for the Master of Arts degree. These requirements must be satisfied prior to the preliminary examinations.

After completing the course work, fulfilling the research tool requirements, passing the preliminary examinations, and presenting an acceptable dissertation prospectus, the student will be recommended for Ph.D. candidacy and will devote full time to the dissertation. Dissertation subjects must be chosen from either United States history, Latin American history, or European history. The final oral examination will cover the field of the dissertation and related matters.

Assistantships and Fellowships

Fellowships and teaching assistantships are available to qualified graduate students. All carry stipends and remission of tuition. Application for these awards should be submitted by January 15.

Additional information concerning rules governing the graduate program in history may be obtained by writing to the director of graduate studies, Department of History.

Courses (HIST)

411-3 World of Ancient Greece. An investigation into the societies, cultures and government of Greece and the Eastern Mediterranean from the

time of the Trojan War to the conquests of Alexander the Great. The course will focus on primary sources and modern analyses pertaining

to such issues as slavery, democracy, religion, Athenian imperialism and cultural difference.

412-3 World of Ancient Rome. An investigation into the society, culture and government of the Romans and the peoples they conquered from the time of Romulus and Remus to the "barbarian" invasions. The course will focus on primary sources and modern analyses pertaining to such issues as imperial expansion and decline, Roman law and politics, social conflict and cultural difference.

413-6 (3,3) Medieval Society. (a) The Early Middle Ages. A.D. 400-1000; (b) The Late Middle Ages, A.D. 1000-1400. An examination of the distinctive elements of medieval European civilization. The first semester will consider the transition from ancient to medieval society and the gradual development of a new social and economic regime. The second semester will be devoted to a study of the full development of that new regime, its flowering in the 13th century and the crisis of the 14th century.

418-3 Renaissance. The focus on the Renaissance in Italy and in particular on its relation to the social and economic context in which it developed. The spread of humanism and humanistic values to other areas of Europe will also be considered.

420-3 Reformation. Concentrates on the movement of religious reforms in the 16th Century. Emphasis on its roots in the past, particularly in earlier expressions of popular piety and to the wider social and political effects in the 16th and 17th centuries.

421-6 (3,3) Absolutism and Revolution: Europe 1600-1815. (a) 1600-1715; (b) 1715-1815. The development of enlightened despotism, the rise of the revolutionary movement and the Napoleonic period.

422-6 (3,3) Intellectual History of Modern Europe. (a) 1600-1815; (b) Since 1815. The first semester will cover the Age of Reason, the Enlightenment, and Early 19th Century Romanticism. The second semester will cover the period from Marx and Darwin to the Contemporary World.

423-3 Diplomatic History of Modern Europe. A study of the European state system and the diplomacy of the major powers, with emphasis on events since 1870.

424-6 (3,3) Social and Revolutionary Movements in Nineteenth Century Europe. (a) 1815-1871; (b) 1871-1914. Changing social and political structure of Europe caused by the impact of industrialization and the French Revolution. The consequences of these developments in terms of the emergence of new social forces and the development of movements for social and political revolution.

425-6 (3,3) Twentieth Century Europe. (a) Era of the World Wars; (b) Since 1945. Political, social, cultural and economic development of the major European states during the present century.

432-3 History of France. Social, economic, political and intellectual evolution from medieval origins to the present day. French contributions to western culture.

433-6 (3,3) History of Germany. German state and society from antiquity to the present. (a) to 1866; (b) since 1866.

434-3 History of Scandinavia. Denmark, Norway, Sweden, Finland and Iceland. Related history of the Baltic and North Sea regions, from prehistoric times to the present.

437-6 (3,3) History of Russia. (a) Russia from the beginnings to the 1860s: Kieven Rus, Muscovy and Imperial Russia to the emancipation of the serfs; (b) Imperial Russia and the Soviet Union from 1865 to the present day. Emphasis on political history.

440-3 Tudor-Stuart England. England from 1485 to 1714. The social, economic and political development of Britain during the crucial two centuries from late feudal anarchy to world power.

442-6 (3,3) English History and Culture. (a) From 1660 to 1780; (b) 1780-1914. An examination of English society and values in novels, essays, memoirs and paintings. The first semester analyzes social and political stability, secularization, economic transformations and foundations of empire. The second semester investigates industrialization, urbanization, the democratization of politics, the growth of empire and changing roles for women and the family. Prerequisite: 330b or consent of instructor.

443-3 Twentieth Century England. The social, economic and political development of England in the twentieth century.

450-6 (3,3) Early America. The evolution of American society from European settlement through the Age of Jefferson, with special emphasis on social and political institutions and thoughts.

451-3 United States History, 1815-1850. The struggle for democratic institutions and the emergence of sectional conflict in the Jacksonian Era.

452-6 (3,3) United States History 1850-1896. (a) Civil War era; (b) the origins of modern America; reconstruction and nationalization; 1865-1896. The study of the background to the Civil War, the Civil War, Reconstruction and the Gilded Age.

453-6 (3,3) United States History, 1896-1945. (a) 1896-1921; (b) 1921-1945. The history of the United States since the 1890's with emphasis upon politics, political ideas and diplomacy.

454-6 (3,3) Cold War United States, 1945-1990. (a) 1945-1963; (b) 1963-1990 Topical course emphasizing the impact of the Cold War on United States society. Section (a) focuses on foreign policy debates, domestic anti-communism and cultural effects of the Cold War. Section (b) focuses on the Vietnam War, the arms race and the effects of the Cold War on economic and social issues (poverty, civil rights, the environment).

460-6 (3,3) Social History of the United States. (a) to 1860; (b) since 1860. The historical development of relationships among America's various ethnic, religious, racial, economic and sexual groups.

461-6 (3,3) Constitutional History of the United States. (a) To 1877; (b) from 1877. Origin and development of the American Constitution from the English background to the present time. Stress is placed on the political, social and

economic forces which influenced the American constitutional system.

462-3 History of American Health and Medicine. Readings and discussion about the development of modern medicine as it affected patients and doctors in the United States. Health care will be traced historically, with discussions of the development of medical science as well as medical organizations and institutions.

463-6 (3,3) History of American Diplomacy. (a) To 1900; (b) Since 1900. General consideration of American foreign policy and the emergence of the United States as world power.

464-3 American Economic and Business History. A survey of economic trends and business developments in American history, from colonial times to the present.

465-6 (3,3) History of the South. (a) The Old South; (b) The New South. Social, economic, political and cultural developments of the South.

466-6 (3,3) History of the American West. (a) Trans-Appalachian Frontier; (b) Trans-Mississippi Frontier. The American frontier and its impact on American society from the colonial period to the 20th century.

467-3 History of American Thought to 1860. The principal intellectual currents in American thought and culture from the 17th century through mid-19th century. Major themes include the intellectual origins and manifestations of Puritanism, the Enlightenment and Romanticism.

469-3 Darwin and the Darwinian World. Readings and discussion on the impact of Charles Darwin on American thought and culture. Focus areas include religion, social ethics, political criticism, social critics, economics, the genteel tradition, utopian writers, race and imperialism.

470-6 (3,3) Continuity and Change in Latin America. (a) To 1825; (b) Since 1825. The interaction of economic forces and intellectual currents with Latin America social structures and political institutions, from pre-Columbian times to the present.

474-3 Andean South America. The political, economic, social and cultural development of the Andean nations from pre-Columbian times to the present.

480-6 (3,3) History of Chinese Civilization. (a) Traditional China; (b) Modern China. The first semester provides a full coverage of traditional China and emphasis on classical philosophies, religions, historical writings, literature, arts and science. The second semester deals with the transformation of China into the modern ages.

484-3 History of Central Asia. Tribes, migrations, wars and power politics in Central Asia and outlying areas of China from Han times through 19th century rivalries to latest developments along the Sino-Soviet frontier.

485-3 Islamic World to 712. A study of the formative years of Islam, and of events which led to the establishment of the first Muslim empire, extending from Spain in the West to India in the East.

487-3 Modern Islamic World. Survey the cultural, social and political impact of Islam on world civilization since the 18th century, with an emphasis on the internal changes within Islam as a result of cross-cultural contact. The impact of col-

onization on the Muslim world and subsequent reform movements are examined.

490-1 to 4 Special Readings in History. Supervised readings for students with sufficient background. Prerequisite: registration by special permission only.

491-3 Historiography. Writings of historians from Herodotus to the present.

493-1 to 6 Problems in History. Topics vary with instructor. May be repeated for a maximum of six semester hours provided registrations cover different topics. Topics announced in advance.

494-3 Quantitative Research in History. An introduction to the application of quantitative data and social science methods to historical research.

496-1 to 9 Internship in History. Supervised field work in public or private agencies or operation where history majors are frequently employed, such as archives and libraries, government offices, communications media, historic sites and museums. Only three hours may be applied to the major and six hours toward the M.A. degree. Prerequisite: consent of department.

497-3 Historical Museums, Sites, Restorations and Archives. The development of museums from antiquity to the present, with emphasis on the United States. Additional topics include historical sites such as battlefields, historic buildings, restorations, monuments and archives. Also examines the purposes and functions of the museum and the tasks of professionals employed in museums of interpretative centers. Given in cooperation with the University Museum.

500-2 The Historian's Craft. Examination of historical methodology and recent trends in historiography. How historians conduct research and convey the results of it. Special treatment of selected topics of historiography. Required of M.A. degree students. Ph.D. degree students should consult graduate advisers.

501-3 Recent Historiography. Trends in historical writing and historical interpretation in the 20th Century.

522-3 to 15 (3 per semester) Colloquium in European History. Group reading and discussion about major periods, subregions and themes in European history. May be repeated as instructors and topics vary.

523-4 to 20 (4 per semester) Research Seminar in European History. Research and writing on selected topics in European history. Students will prepare a major paper. May be repeated as topics and instructors vary.

554-3 to 15 (3 per semester) Colloquium in United States History. Group reading and discussion about major periods, subregions and themes in United States history. May be repeated as topics and instructors vary.

555-4 to 20 (4 per semester) Research Seminar in United States History. Research and writing on selected topics in United States history. Students will prepare a major paper. May be repeated as topics and instructors vary.

570-4 to 12 (4 per semester) Research Seminar in Latin American History. Research and writing on selected topics in Latin American history. Students will prepare a major paper. May be repeated as topics vary.

571-3 to 9 (3 per semester) Colloquium in Latin American History. Group reading and discussion about major periods, subregions and themes in Latin American history. May be repeated as topics vary.

580-4 to 12 (4 per semester) Research Seminar in Asian History. Research and writing on selected topics in Asian history. Students will prepare a major paper. May be repeated as topics vary.

581-3 to 9 (3 per semester) Colloquium in Asian History. Group reading and discussion about major periods, subregions and themes in Asian history. May be repeated as topics vary.

590-1 to 8 (1 to 3 per semester) Readings in History. Individual readings. Registration by special permission only. Student must obtain the consent of the faculty member involved. M.A. degree students are limited to a maximum of 4 hours toward the 30-hour requirement. Graded *S/U* only. Prerequisite: registration by special permission only.

591-2 to 5 Independent Investigation. Graded *S/U* only. Prerequisite: doctoral standing and consent of graduate adviser.

593-4 to 12 (4 per semester) Research Seminar in Contemporary History. Research and writing on selected topics in contemporary history. Students will prepare a major paper. May be repeated as topics and instructors vary.

594-3 to 9 (3 per semester) Colloquium in Social Science History. Group reading and discussion relating to the use of theories and methods from the social science disciplines in historical interpretation.

595-4 to 8 (4,4) Research Seminar in Comparative History. Research on selected topics

employing cross-cultural or other comparative approaches. Students will prepare a major paper. May be repeated as topics vary.

596-3 Tutorial in History. Research and writing in history in close consultation with an instructor to produce a major paper on a selected topic. This course may count toward graduation as a seminar and the paper will be placed on file in the Department of History. Students may take this course only once at the M.A. level and once at the Ph.D. level. Prerequisite: consent of the director of graduate studies.

597-1 to 2 (1 per semester) Practicum in Teaching College-Level History. Students will learn how to lead discussion sections and/or to teach independent courses at the college level. M.A. or Ph.D. students assigned for the first time as a discussion leader must take this course; advanced Ph.D. students assigned for the first time to teach a general education course must take this practicum. Graded *S/U* only. Prerequisite: Open only to graduate students in history with the consent of the director of graduate studies.

599-1 to 6 Thesis. Minimum of three hours to be counted toward a Master's degree.

600-1 to 30 (1 to 16 per semester) Dissertation.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Interactive Multimedia

<http://www.siu.edu/gradschl>

A Master of Arts degree in interactive multimedia is under development. Refer to the Graduate School website for additional information as it becomes available, or contact the College of Mass Communication and Media Arts.

Journalism

E-mail: peace99@siu.edu

COLLEGE OF MASS COMMUNICATION AND MEDIA ARTS

Akhavan-Majid, Roya, Associate Professor, Ph.D., University of Minnesota, 1988; 1988. Telecommunications policy, international communication.

Atwood, L. Erwin, Professor, *Emeritus*, Ph.D., University of Iowa, 1965; 1967. Political communication, international communication.

Brown, George C., Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1963; 1956.

Ford, James L. C., Professor, *Emeritus*, Ph.D., University of Minnesota, 1948; 1955.

Jaehnig, Walter B., Associate Professor, Ph.D., University of Essex, England, 1974; 1987. Media ethics, media theory and philosophy, political violence reporting.

Johnson, Thomas J., Associate Professor, Ph.D., University of Washington, 1989; 1988. Media history, political communication.

Jugenheimer, Donald W., Professor and *Director*, Ph.D., University of Illinois, 1972; 1996. Advertising, media management.

Kelly, James D., Assistant Professor, Ph.D., Indiana University, 1990; 1990. Visual communication, graphic design.

Lowry, Dennis T., Professor, Ph.D., University of Iowa, 1972; 1990. Mass communication theory, political communication.

McCoy, Ralph E., Professor, *Emeritus*, Ph.D., University of Illinois, 1956; 1955.

Paddon, Anna R., Assistant Professor, Ph.D., University of Tennessee, 1985; 1988. Mass communication education, mass communication history.

Ramaprasad, Jyotika, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1984; 1986. International communication, mass media and social reality, international advertising.

Spellman, Robert, Associate Professor, J.D., Cleveland State University, 1977; 1985. Mass communication law, opinion privilege, media ethics.

Stone, Gerald C., Professor, Ph.D., Syracuse University, 1975; 1991. Reporting and news writing, newspaper research studies.

Stonecipher, Harry W., Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1971; 1969.

The considerable growth of the mass communication industries has caused an increased need for professionally educated men and women with graduate degrees who want to pursue careers as journalists in the mass media, communication specialists in industry and government, researchers, teachers, and university faculty members.

Graduate programs in the School of Journalism are designed to help students achieve significant intellectual growth as they prepare for these careers. It is intended that the student's entire graduate program be a challenging, stimulating, and valuable educational experience. For this reason, the School of Journalism has 3 degrees, each offering a different approach to graduate education. In each degree program, students take some of their work in departments other than journalism so that they may explore areas of interest to them and inquire into other disciplines.

The School of Journalism offers graduate programs leading to the Master of Arts, the Master of Science, and the Doctor of Philosophy degrees with a major in journalism. Available areas of emphasis are: social and behavioral approaches to communication processes and effects; media history; and legal studies in mass communication. The Master of Arts and Ph.D. degrees are research degrees culminating in the preparation of a thesis or dissertation. Students are expected to conduct research to provide answers to important questions, to discover new information, to show new associations between previously known facts, or to supply historical or legal information about particular subjects.

The Master of Science degree is a media-oriented degree designed to be of benefit to individuals who wish to prepare themselves to be more proficient in their professions and does not necessarily involve the kind of research required in preparing a thesis.

Admission to the Degree Program

Persons seeking admission should consult the appropriate section of this catalog. GRE or GMAT Aptitude Test scores must be submitted before a student enters the program. Students without a previous journalism or mass communication degree or professional media background are usually required to take some undergraduate courses without credit as a way of gaining background. The amount of this course work will be determined by an adviser in consultation with other faculty members. A TOEFL score of 600 or higher is required of all foreign students, except those from English-speaking countries. A minimum undergraduate GPA of 3.0 is required for acceptance into the graduate program.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Academic Retention

In addition to the retention policies of the Graduate School, the School of Journalism requires that each master's degree student must maintain an overall grade point average of 3.00 ($A = 4$) and each Ph.D. student must maintain an overall grade point average of 3.25 ($A = 4$). Upon falling below this average, stu-

dents will be allowed one academic term to bring their averages up to the minimum; failing this they will be dropped from the program and will not be allowed to re-apply. No course in which the grade is below *C* shall count toward the degree nor fulfillment of any requirement, but the grade will be included in the grade point average. No more than 3 hours of *C* work in graduate courses will count toward either degree.

All students are subject to regular review by the School of Journalism graduate faculty. Those not attaining the minimum acceptable standards or who in any way fail to meet any other requirements or standards set by the faculty will be dropped as majors. Doctoral students may be required to take extra work if any grades of *C* or lower are earned at SIUC. Students on academic probation are not eligible to hold graduate assistantships.

Master of Arts Degree

The Master of Arts degree student usually builds on a base of social science and a study of journalism or mass communication leading to a career in teaching, scholarship, or applied research in advertising, public relations, media management, opinion research, or similar areas. The degree also may lead to Ph.D. studies.

Candidates for the M.A. degree must complete a minimum of 30 semester hours of graduate work, including 3 hours for the thesis. Additional courses may be required if students change their areas of interest or if performance in course work indicates the need for more course work. No fewer than 18 nor more than 21 semester hours of course work must be earned in journalism. Remaining course credits should be taken in departments whose disciplines have strong theoretical bases. Courses in some departments may not, therefore, be used to meet requirements. Students often elect courses in history, psychology, political science, sociology, anthropology, economics, and guidance.

Each student is required to prepare, write, and defend a thesis which demonstrates a capacity for investigation and independent thought. Students must be enrolled for thesis credit during the semester they defend their theses.

Failure to present and defend an acceptable thesis proposal, or failure to maintain continuous progress toward completion of degree requirements serve as reasons for dismissing a student from the program. Additional work may be required of those students whose progress is interrupted.

Master of Science Degree

The Master of Science degree program with a major in journalism provides advanced professional training for careers in the mass media and related areas. Persons with graduate degrees from accredited schools of journalism are in demand by newspapers, magazines, broadcasting, advertising and public relations firms, government, and industry. The growing complexity of communication increases the need for persons sensitive to the intricacies of communicating via the mass media.

The Master of Science degree work consists of 2 separate programs. They are broadly based and draw upon the resources of a diverse and knowledgeable journalism faculty and upon many other academic areas in the University. From such resources, the School of Journalism provides individually developed programs for graduate students aiming at such careers as newspaper reporting, radio and television news, advertising, public relations, magazine editing, media management, and teaching.

PROGRAM A

Thirty semester hours are required for the Master of Science degree in program A, including 3 hours for thesis or professional project, whichever the student chooses. From 15 to 21 semester hours of course work must be earned in journal-

ism. This includes 9 hours to be earned in three required core courses, JRNL 500, 504, and 512. Remaining semester hours should be taken in a discipline or disciplines appropriate to the student's area of study. Students must successfully complete 6 hours of written master's comprehensive examinations and a two-hour oral. Formal, oral defense both of the thesis or project proposal and of the completed thesis or project is required.

PROGRAM B

Program B requires 36 semester hours of course work, but the student writes a research paper instead of a thesis or master's project. The research paper is normally an extension of the requirements for a specific course of the student's choosing. From 15 to 21 hours of course work must be earned in journalism. This includes 9 hours to be earned in three required core courses, JRNL 500, 504, and 512. Remaining semester hours should be taken in a discipline or disciplines appropriate to the student's area of study. Students must successfully complete 6 hours of written master's comprehensive examinations and a two-hour oral.

Doctor of Philosophy Degree

The Ph.D. degree program is designed to produce scholars and teachers who can make significant contributions to the understanding and development of the mass media and their utilization. Doctoral studies include the entire process of mass communication, including communication theory, media history, mass media law, and mass media institutions and their interrelationships with other societal institutions. The program asks students to achieve breadth in their studies, but allows each student to develop a special area of interest and research.

Normally, 3 years of concentrated study, including preparation of a dissertation, will be required to earn the degree, which is built on the base of a suitable master's degree program.

Minimum course requirements for the Ph.D. degree include 38–40 semester hours beyond the master's degree, including basic foundations in mass communication theory and research methods (JRNL 500 and 504). In addition, programs of study will include 2 appropriate research tools, as described below. All doctoral students must complete a graduate course in media law and a graduate inferential statistics course (GUID 506). An evaluation of previous work is made and transfer credit is allowed only for work which fits the degree plan. Approximately two-thirds of course semester hours will be earned in journalism and mass communication; the remaining hours will be earned in a nonjournalism area of study, which might include work in more than one department. Additional course work may be required if the student's area of interest changes or if performance in courses or comprehensive examination results indicate the need.

During the second semester of enrollment, each Ph.D. student will prepare a total program plan for the degree and secure sponsorship by a dissertation committee chair. The plan should include a list of courses and tools, with some explanation and justification for their selection in relation to academic goals. The plan will be discussed and modified, when appropriate, before approval. Once approved, the plan may be changed only with permission of the adviser. The student may deviate from the 2/3–1/3 pattern if the resulting program contains work leading to appropriate research or professional career goals.

Tool Requirements. Minimum course requirements listed above do not include courses taken to satisfy tool requirements. The Ph.D. student, in consultation with the adviser, will select 2 useful tools from among:

Research Design — JRNL 501

Historiography — JRNL 530

Legal Research — JRNL 540

Statistics — GUID 506 and 507

Computer Science — Courses to be selected

Modern Foreign Language — Standard Proficiency Examination

Courses listed as tools are subject to change without notice at times when departments change course content, titles, or numbers. Only grades A or B are accepted for tool courses.

A student may propose other research tools for consideration by the School of Journalism, but such tools must be useful in the conduct of research, especially for the doctoral dissertation.

Examinations. Each student must pass rigorous comprehensive written and oral examinations after completing tool requirements and all course work (with all incomplete and deferred grades removed). The examination must be completed within one year after the student has satisfied all course and tool requirements. Failure to successfully complete the exams during the one-year period will result in dismissal from the program. While the form and scope of the examinations are at the discretion of the graduate faculty members of the School of Journalism, within basic parameters, the examinations comprehensively test the student's understanding of communication and communication research. Each student takes a minimum of 20 hours of exams including an outside area.

Students prepare dissertation proposals, defend and explain the proposals before their committees and complete the research and write their dissertations. Within one year after admission to candidacy, students must have written dissertation proposals approved by their committees. Dissertations must be based on scholarly research and independent thought.

Students must enroll for a minimum of 24 hours in JRNL 600. Each student must enroll in JRNL 600 each term between admission to candidacy and completion of all requirements for the Ph.D. degree.

Graduate students who have completed their course work and the minimum number of credits required for thesis or dissertation must enroll in JRNL 601, Continuing Research, each semester until the completion of their degree programs.

The dissertation defense will be before members of the dissertation committee (all of whom must be present) and interested observers. Although others than committee members may ask questions of the student, the pass or fail decision on the oral will be made by committee members only.

Courses (JRNL)

400-3 History of Journalism. Development of American newspapers, magazines, and radio-television with emphasis on cultural, technological and economic backgrounds of press development. Current press structures and policies will be placed in historical perspective.

401-3 International Communication. An analysis of the development, structure, functions, and current status of media systems in other countries. Emphasis given to studying factors that facilitate or restrict the flow of intranational and international communication.

406-3 Advertising/IMC Campaigns. (Formerly Journalism 476) Conceptual synthesis and practical application of business, research, media and creative principles used in the formulation of persuasive messages. Includes the development of a complete integrated marketing communications (IMC) campaign for the specific advertiser. Includes all relevant target audience contact points (e.g., advertising, sales promotion, marketing public relations, event marketing, packaging) and

both written and oral presentation of the campaign.

407-3 Social Issues and Advertising/IMC. (Formerly Journalism 479) Analysis of social issues involving advertising and integrated marketing communications (IMC); economic relationships, government and self-regulation, cultural effects, influence on media content and structure, role in democratic processes, international comparisons, and the stereotyping of women minorities and other audience segments. Prerequisite: senior standing.

411-3 Public Affairs Reporting. Covering government and other public agencies, including the city hall, courts, county offices, business, finance, agriculture, labor and other specialized beats. Prerequisite: 311.

442-3 The Law of Journalism. Legal limitations and privileges affecting the mass media to include the law of libel, development of obscenity law, free press and fair trial, contempt of court, right of privacy, advertising and antitrust regula-

tions, copyright and access to the press. Prerequisite: senior standing.

452-3 Ethics and News Media. An exploration of ethical problems confronting journalists and an evaluation of how these problems are handled by the media through a focus on current examples. The implications to the media and to society of successes and failures in meeting ethical concerns are discussed. Prerequisite: senior standing.

461-3 Specialized Publications. Functions, operations, and problems of industrial, trade, business, professional, literary and other specialized publications. Management, personnel, and production practices. Use of research in solving problems and setting policies.

462-3 Magazine Article Writing. Principles, problems and techniques involved in producing free-lance and staff-written magazine articles with an emphasis on determining the relationship between article content and audience market. Prerequisite: 311.

490-1 to 6 (1 to 3, 1 to 3, 1 to 3) Readings. Supervised readings on subject matter not covered in regularly scheduled courses. Undergraduates limited to maximum 2 credits per semester. Graduates limited to maximum 3 credits per semester. Prerequisite: written consent of instructor and area head.

494-1 to 3 Practicum. Study, observation and participation in publication or broadcast activities. Prerequisite: consent of instructor and area head. Mandatory Pass/Fail for undergraduates.

495-1 to 12 (1 to 6, 1 to 6) Proseminar. Selected seminars investigating media problems or other subjects of topical importance to advanced journalism majors. Seminars will be offered as the need and the interest of students demand. Prerequisite: senior standing.

500-3 Research Methodology in Mass Communication I. Identification of research problems, formulation of concepts and research hypotheses in journalism and mass communication, sampling procedures, design of experimental and survey research.

501-3 Research Methodology in Mass Communication II. Problems of measurement, design and analysis in journalism and mass communication research. Techniques of attitude scaling, questionnaire construction. Bivariate and multivariate data analysis. Procedures for the creation, management and analysis of large data sets using computer programs. Prerequisite: 500 and Educational Psychology 506, concurrent registration in 507.

504-3 Foundations of Mass Communication Theory. Conceptual orientation toward analysis of relationships in the mass communication channels. Emphasis on problem identification and relationships between philosophical basis for behavioral analysis of communication and empirical work in the field; reviews of selected literature.

505-3 Theoretical Issues in Mass Communication. Analysis and critique of recent theory and research. Examination of current trends in research and reviews of selected literature relating to mass communication in the areas of systems, interpersonal, mass media, intercultural, political, organizational, instructional and health communication. Prerequisite: 504.

506-3 Significant Studies in Mass Communication Research. A review of a broad selection of early literature in communication research that has provided much of the conceptual basis for empirical studies during the past two decades.

510-3 Literature of Journalism. Critical reading, discussion and evaluation of 20th century journalistic literature in such areas as media history, muckraking, press criticism, biography, memoirs and reminiscences, depiction of the journalist in fiction, new journalism.

511-3 Studies in Journalism History. Critical analysis of literature showing trends and developments in journalism before 1900. Approximately 100 books are examined in the context of social, political and intellectual history of the times. Lectures, reports and discussions.

512-3 Press Freedom and Censorship. Examination of the philosophical and theoretical bases of press freedom in the United States with attention to the press's English heritages and to numerous attempts at media censorship from the colonial period through the 20th century.

520-3 Communication and National Development. Functions of mass media of communication in the process of national development in the third world. Review of models of national development; problems in the diffusion and adoption of innovation; diffusion of information and influence in modernization of developing countries.

530-3 Historical Research in the Mass Media. Methods of data collection, analysis, organization and presentation for historical research in mass media. Use of such sources as newspapers, archives, personal papers, manuscripts and oral history. Use of statistical methods in mass media historical research. Prerequisite: 511.

540-3 Legal and Governmental Research in the Mass Media. Study of research procedures related to executive, congressional, judicial and quasi-official reports and documents as they affect the mass media. Focus of the study will be an examination of the legal interrelationship of the government and the media. Prerequisite: 442.

550-1 to 12 (1 to 4, 1 to 4, 1 to 4) Topical Seminar. Seminars on subjects of current interest, with the topics determined through student and faculty request and interest. Topics include audience analysis, communication and social systems, media economics, persuasive communications.

560-3 Seminar: Critical and Persuasive Writing. An analysis of the opinion function of the news media—the editorialist, the opinion columnist, and the critical reviewer—with emphasis upon the theoretical bases of persuasion. Students will study and evaluate various types of persuasive writing and will also write a number of editorials, columns, and reviews.

592-1 to 6 (1 to 3, 1 to 3, 1 to 3) Individual Research. Conduct of research reports for projects of an individual nature.

599-1 to 6 Thesis.

600-1 to 24 (1 to 16 per semester) Dissertation.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research,

or the minimum thesis, or research hours before being eligible to register for this course. Concur-

rent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Linguistics

E-mail: ling@siu.edu

COLLEGE OF LIBERAL ARTS

Angelis, Paul, Associate Professor and *Chair*, Ph.D., Georgetown University, 1968; 1981. Language testing, language teaching methodology, English for specific purposes.

Brutten, Sheila, Associate Professor, M.A., Southern Illinois University at Carbondale, 1965; 1968. TESOL, language testing, reading comprehension.

Friedenberg, Joan, Professor, Ph.D., University of Illinois at Urbana-Champaign, 1979; 1994. Second language acquisition theory and methods, bilingual education, multicultural education, vocational ESL.

Gilbert, Glenn G., Professor, Ph.D., Harvard University, 1963; 1970. Pidgin and creole languages, German, sociolinguistics, historical linguistics, dialectology, history of linguistics.

He, Agnus Weiyun, Assistant Professor, Ph.D., UCLA, 1993; 1992. Discourse analysis, pragmatics, genre theory, language learning and teaching in context.

Johnson, Ruth, Assistant Professor, Ph.D., Florida State University, 1993; 1993. Speech perception, intercultural communication, TESOL methodology, computer-assisted instruction.

Kim, Alan, Associate Professor, Ph.D., University of Southern California, 1985; 1988. Syntactic theory, functional syntax, semantics, comparative linguistics, Japanese and Korean syntax.

Lakshmanan, Usha, Assistant Professor, Ph.D., University of Michigan, 1989; 1990. First and sec-

ond language acquisition, psycholinguistics, syntactic theory, tamil syntax.

Nathan, Geoffrey S., Associate Professor, Ph.D., University of Hawaii, 1978; 1980. Phonology, phonetics, cognitive grammar, syntax.

Nguyen, Dinh-Hoa, Professor, *Emeritus*, Ph.D., New York University, 1956; 1969.

Parish, Charles, Professor, *Emeritus*, Ph.D., University of New Mexico, 1959; 1965.

Perkins, Kyle, Professor, Ph.D., University of Michigan, 1976; 1976. Language testing, language teaching methodology, discourse theory and processing, the composing process, reading comprehension.

Redden, James E., Professor, *Emeritus*, Ph.D., Indiana University, 1965; 1967.

Wilhelm, Kim Hughes, Assistant Professor, Ph.D., Indiana University, 1992; 1993. Second language acquisition, language education (ESL/EFL/bilingual/foreign language), curriculum and materials design, teacher education, English for academic purposes, computer-assisted language learning.

Winer, Lise, Associate Professor, Ph.D., University of the West Indies, 1982; 1986. EFL/ESL methodology, composition, reading, creole studies, sociolinguistics.

Winters, Margaret E., Professor, Ph.D., University of Pennsylvania, 1975; 1977. Historical linguistics, Romance comparative linguistics, syntax/semantics, cognitive grammar.

The Department of Linguistics offers programs leading to the Master of Arts degree in applied linguistics and the Master of Arts degree in Teaching English to Speakers of Other Languages (TESOL).

Overview of Graduate Programs

The M.A. program in applied linguistics is designed to give students a broad training in most aspects of contemporary linguistics, including historical linguistics, phonology, pidgins and creoles, psycholinguistics, second language acquisition, sociolinguistics, and syntax. In addition, students will pursue the study of one area in depth through further coursework and thesis research. Graduates of the applied linguistics program frequently go on to more advanced study and research in linguistics leading to the Ph.D. degree.

The M.A. program in TESOL is designed primarily for students who wish to pursue careers in the teaching of English to speakers of other languages either in the United States or abroad. The program combines both theory and practice. In addition to core courses in linguistics, students in the TESOL program are required to take courses in the theory and methods of language teaching and to teach in two supervised practicums in the teaching of oral and written English. Graduates of the TESOL program can go on to advanced study of language learning and teaching or related fields.

For students who are interested in language study but are not committed to either graduate major, the department offers a number of interesting, non-spe-

cialist courses which may serve as electives in degree programs such as those offered by the Departments of Anthropology, Communication Disorders and Sciences, English, Foreign Languages and Literatures, Psychology, Speech Communication, and the College of Education. A sequence of courses is also available for students wishing to pursue a double major combining applied linguistics, or TESOL with other programs at the master's level.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted. Applicants for admission should address inquiries to the Chair, Department of Linguistics, Southern Illinois University at Carbondale, Carbondale, IL 62901-4517, USA.

Admission to the Degree Programs

Undergraduate GPA. Applicants for admission to either degree program, in addition to meeting the requirements for admission to the Graduate School, are expected to have undergraduate grade point averages of at least 3.0 ($A = 4.0$). Applicants with GPA's below 3.0 may be granted conditional admission. However, students admitted on a conditional basis must earn a graduate GPA of 3.0 after the first 10 hours of letter-graded course work; failure to do so will result in the student being dropped from the program.

Foreign Language Requirement. All students who are native speakers of English must have completed at least two semesters of study of a foreign language within the preceding five years (excluding high school) and have achieved a grade of *B* or better. Those students who have achieved proficiency in a foreign language by means other than graded academic study must demonstrate that they have achieved a minimum level of novice-mid as defined in the proficiency guidelines published by the American Council on the Teaching of Foreign Languages. In recognition of their experience in learning English, international students who have learned English as a second or foreign language are exempt from this requirement.

TOEFL and GRE. International student applicants who are not native speakers of English must achieve a score of at least 570 on the Test of English as a Foreign Language (TOEFL). Although submission of scores on the Graduate Record Examination (GRE) is not required for admission to the Graduate School nor to the department, applicants are advised that high GRE scores put them at a competitive advantage when applying for university fellowships or departmental assistantships.

Grammar Test. All students entering either the M.A. program in applied linguistics or the M.A. program in TESOL must demonstrate a minimum level of knowledge of the grammar of English. This is assessed by a departmental grammar test administered to all students at the beginning of their first term. Students who do not pass the test are required to take an undergraduate course in English grammar (LING 104) and pass the course with a grade of *B* or better. This course does not count for credit toward a graduate degree in applied linguistics or TESOL.

English Proficiency Tests. Applicants for admission must also demonstrate proficiency in spoken and written English, which is measured by departmental examinations given upon the student's arrival. Students who fail these tests are required to take an undergraduate course in English composition (either ENGL 290 or LING 290) and pass the course with a grade of *B* or better. This course

does not count for credit toward a graduate degree in applied linguistics or TESOL.

Academic Retention

Academic Probation. As required by the Graduate School, any student whose GPA falls below 3.0 will be placed on academic probation. Any student who fails to return to good standing after one term on academic probation will not be eligible to hold a graduate assistantship. Any student who fails to return to good standing after two terms on academic probation will be dropped from the program. Any student who accumulates three or more incompletes will be put on academic probation and may return to good standing by reducing the number of incompletes to two or fewer.

Minimum Grades in Core Courses. As described below, both M.A. programs include a number of core courses which are required of all students. These courses must be passed with a grade of *B* or better. Students who receive a grade lower than *B* on a core course must take the course again. They will register officially for the course and will be granted a letter of permission to do so from the department. Both grades will be counted in calculating GPA. Students who need to repeat core courses may take other courses concurrently or sequentially for which the core courses are prerequisites.

Grade Point Average to Graduate. All graduate work must be completed with an overall GPA of 3.0.

Master of Arts Degree in Applied Linguistics

The Master of Arts degree in applied linguistics encompasses a broad range of required core courses plus the opportunity to pursue the study of one area in depth through elective courses and a thesis. A minimum of 43 semester hours is required for the M.A. in applied linguistics, of which a minimum of three and a minimum of six may be allowed for the thesis (LING 599). A minimum of 15 semester hours must be at the 500 level.

Required Courses for the M.A. in Applied Linguistics (25 semester hours)

LING 401-4 General Linguistics

LING 402-3 Phonetics

LING 405-4 Phonological Theories

LING 406-3 Introduction to Historical Linguistics

LING 408-4 Syntactic Theory

LING 415-3 Sociolinguistics

LING 445-4 Psycholinguistics

Elective courses may be selected from courses offered within the department, or from courses taught by faculty in the Departments of Anthropology, Communication Disorders and Sciences, Computer Science, English, Foreign Languages and Literatures, Philosophy, Psychology, Speech Communication, and the College of Education. Where appropriate, students are encouraged to take courses in quantitative and ethnographic research methods taught in the Departments of Educational Psychology and Anthropology. Students are also encouraged to attend the annual summer institutes sponsored by the Linguistic Society of America and TESOL. Credit will be allowed for course work successfully completed in this way.

A thesis is required of all students in the M.A. in applied linguistics program. The thesis is a written summary of a student's independent research conducted while enrolled in one of the department's M.A. programs. A thesis is expected to include a clear statement of the topic, identification of the particular issues to be investigated, a literature review, an explanation of the procedures followed, and

an analysis and discussion of research findings. Each student writing a thesis must have a thesis committee composed of at least three faculty members, one of whom serves as chair of the committee and must be from the Department of Linguistics. The thesis must be submitted to a public oral examination by the student's committee. Detailed information regarding the thesis may be found in *Thesis Policies and Guidelines*, copies of which are available from the department.

Master of Arts Degree in Teaching English to Speakers of Other Languages

The M.A. degree in TESOL blends linguistic science with the art of classroom practice. It prepares students both intellectually and experientially, so that as teachers they are capable of making wise and informed choices among different language teaching approaches, methods, and techniques. In addition, students will understand how differences among individual students, teaching and learning situations, and social structures influence decisions they will be called upon to make as teachers. The TESOL master's program provides a firm and broad foundation in current theories of language and language learning and graduates will be prepared to take on professional careers such as teacher educator and curriculum specialist as well as classroom teacher.

There are three alternative ways to combine course work and research which are available for students enrolled in the M.A. degree program in TESOL:

Study Plan A. This study plan requires 32 semester hours of course work, written comprehensive examinations, and a research report. A minimum of 15 semester hours must be at the 500 level. Students who follow this plan may be able to complete all requirements for the M.A. in TESOL degree by full-time enrollment for three semesters.

Study Plan B. This plan requires 38 semester hours of course work and a research report. A minimum of 15 semester hours must be at the 500 level. The research report in this case must be subject to a public oral examination by the student's committee members. Students who follow this plan may be able to complete all requirements for the degree by full-time enrollment for four semesters.

Study Plan C. This plan requires 38 semester hours of course work including a minimum of three and a maximum of six semester hours which may be allowed for a thesis (LING 599). A minimum of 15 semester hours must be at the 500 level. The thesis is subject to a public oral examination by the student's committee members. Students who follow this plan have the opportunity to study an area of interest in considerable depth and to carry out an empirical research project or to develop instructional materials or curricula. This plan requires at least four semesters of full-time enrollment.

Whichever study plan a student chooses, six core courses are required. These core requirements are as follows.

Required Courses for the M.A. in TESOL (20 semester hours)

LING 401-4 General Linguistics

LING 402-3 Phonetics

LING 531-3 Pedagogical Grammar for TESOL

LING 570-4 Theory and Methods of TESOL

LING 581-3 Practicum in Teaching Oral English

LING 585-3 Practicum in Teaching Written English

The remaining 12 to 18 semester hours of course work may be selected from electives offered by the Department of Linguistics. Occasionally, courses taught

by faculty in related departments are used to complete elective requirements where such courses are appropriate to the student's area of specialization. Students are also encouraged to attend the annual summer institutes sponsored by TESOL and the Linguistic Society of America. Credit will be allowed for course work successfully completed in this way.

Written Comprehensive Examination. A written comprehensive examination is required by students in the M.A. in TESOL degree program who are following study plan A. Students must take and pass this examination, which covers several different areas of the program. The examination may not be taken more than twice. In order to be eligible to take the examination, students must have a graduate GPA of at least 3.0 at the time the examination is given and must have passed the departmental test of English grammar.

Research Report. A research report is required of students in the M.A. in TESOL degree program who are following study plans A or B. The research report is a written summary of a student's independent research conducted while enrolled in the M.A. in TESOL program. It is expected that the research report will be both quantitatively and qualitatively more extensive than a research paper done for any one course in the department. However, many students do use work done in a particular course and a paper from that course as a basis for the research report. Two faculty members serve as readers of the report. Students following study plan B are required to submit their research report to a public oral examination by their readers. A public oral examination of the research report is not required of students following study plan A; however, both faculty readers must approve the final draft of the report. Detailed information regarding the research report may be found in *Research Report Policies and Guidelines*, copies of which are available from the department.

Thesis. A thesis is required of students following study plan C in the M.A. in TESOL program. The thesis is a written summary of a student's independent research conducted while enrolled in one of the department's M.A. programs. A thesis is expected to include a clear statement of the topic, identification of the particular issues to be investigated, a literature review, an explanation of the procedures followed, and an analysis and discussion of research findings. Each student writing a thesis must have a thesis committee composed of at least three faculty members, one of whom serves as chair of the committee and must be from the Department of Linguistics. The thesis must be submitted to a public oral examination by the student's committee. Detailed information regarding the thesis may be found in *Thesis Policies and Guidelines*, copies of which are available from the department.

Courses (LING)

The Department of Linguistics offers courses toward the Master of Arts degree in applied linguistics and the Master of Arts degree in teaching of English to speakers of other languages (TESOL).

401-4 General Linguistics. Basic concepts and methods of general linguistics. Fundamentals of the nature, structure and functioning of language. Data manipulation and problem solving.

402-3 Phonetics. Theory and practice of articulatory phonetics.

403-3 English Phonology. Study of English phonology, including phonetics, phonemics and prosodics. Prerequisite: 300 or 401, 402 or consent of department.

404-3 American Dialects. Regional variation and social stratification of American English.

Phonological and syntactic differences among the major dialects of American English. Prerequisite: one previous course in linguistics.

405-4 Phonological Theories. A survey of various phonological theories from the 19th century up to the present, including theoretical issues arising therefrom and relationships among the theories. Limited data analysis within the perspectives of the different theories. Prerequisite: 300 or 401, 402.

406-3 Introduction to Historical Linguistics. An introductory survey of historical and compara-

tive linguistics, including terminology, assumptions and methods of investigation. Satisfies the COLA Writing-Across-the-Curriculum requirement. Prerequisite: 405 or consent of instructor, 408 recommended.

408-4 Syntactic Theory. This course is an introduction to the major concepts and issues in generative grammar. Data from English and other languages will be examined and students will be provided with numerous opportunities to solve problems in syntax. Students will also be given an opportunity to carry out an individual project in syntax. Prerequisite: 300 or 401 or consent of instructor.

409-3 Linguistic Structure of Modern German. (Same as German 411.) The descriptive study of phonology, grammatical structure, and vocabulary of modern German with consideration of its structural differences from English and application to teaching. Appropriate for students with at least two years of German. Conducted in English.

411-3 The Linguistic Structure of Chinese. (Same as Chinese 410.) Phonology and syntax of Mandarin Chinese. Principal phonological features of major Chinese dialects. Special emphasis on the contrastive analysis between Mandarin Chinese and English. Theoretical implications of Chinese syntax for current linguistic theories. Prerequisite: one year of Chinese or Linguistics 401.

412-3 The Linguistic Structure of Japanese. (Same as Japanese 410.) Inductive approach to the analysis of various aspects (such as phonology, morphology, syntax) of Japanese grammar with emphasis on syntactic structures within any of the current theoretical frameworks such as pragmatics, functionalism and formal linguistics. May include contrastive analysis between Japanese and English, and close examination of the theories of comparative-historical linguistics of Japanese and Korean. Prerequisite: one year of Japanese or one previous course in linguistics or consent of instructor.

413-3 Linguistic Structure of French. (Same as French 411.) Study of the phonology, morphology and syntax of modern spoken and written French, stressing interference areas for English speakers in learning French. Prerequisite: French 320a and 321 or equivalent.

414-3 Linguistic Structure of Spanish. (Same as Spanish 411.) Theory and practice in Spanish pronunciation and study of Spanish grammatical structure, in contrast to English, with application to teaching.

415-3 Sociolinguistics. History, methodology and future prospects in the study of social dialectology, linguistic geography, multilingualism, languages in contact, pidgin and creole languages, and language planning. Prerequisite: one previous course in linguistics or consent of instructor.

425-3 Philosophy of Language. (Same as Philosophy 425.) An investigation into the way language is based on the nature of human cognitive structures, including metaphor, prototypes, frames and various kinds of imaginative structures. Central topics include the grounding of meaning and conceptual structure in bodily experience, the role of imagination in reasoning and the metaphorical nature of thought.

430-3 to 6 (3,3) Grammatical Structures. Detailed analysis of the structure of particular languages. May be repeated to a total of six hours credit with consent of instructor. Prerequisite: one previous course in linguistics or consent of instructor.

440-1 to 6 (1 to 3 per topic) Topics in Linguistics. Selected topics in theoretical and applied linguistics. May be repeated to a total of six hours credit with consent of instructor. Prerequisite: one previous course in linguistics or consent of instructor.

442-3 Language Planning. Survey of the field of language planning: definitions and typologies, language problems, language treatment, attitudes and beliefs about language, relations between language planning processes and other kinds of social and economic planning, linguistic innovations and other processes of language change, implementation of language policies. Prerequisite: 300 or 401.

445-4 Psycholinguistics. (Same as Psychology 445.) A broad spectrum introduction to psycholinguistics. Topics to be covered include general methodology for the study of psycholinguistics, the nature of language, theories of human communication, language comprehension and production, first and second language acquisition, meaning and thought, natural animal communication systems, and language and the brain.

450-3 to 6 (3,3) Language Families. A synchronic survey of particular language families or sub-families. May be repeated to a total of six hours credit with consent of instructor. Prerequisite: one previous course in linguistics or consent of instructor.

501-3 Approaches to Error Analysis. Theory and methodology of contrastive analysis and error analysis. Application of both methodologies to comparison of English syntactic and phonological structures with those of other languages. Prerequisite: 405 and either 408 or 531, or consent of instructor.

506-4 Historical Linguistics. Theories and methods in the study of the history and prehistory of languages and language families. Prerequisite: 405 and 406, or consent of department.

507-3 Pidgin and Creole Languages. (Same as Anthropology 540.) Survey of the world's pidgins and creoles, with emphasis on the English-based Atlantic creoles. Comparison of creolization with first and second language acquisition and with the origin and evolutionary development of human language. Prerequisite: one previous course in linguistics or consent of instructor.

510-3 History of Linguistics. The history of linguistic inquiry from classical times to the present. Prerequisite: one previous course in linguistics or consent of instructor.

531-3 Pedagogical Grammar. This course explores the relationships among language structure, language learning and language teaching in order to understand the role of grammar in TESOL. The primary aims of the course are to enable students to: (1) become more aware of the way the English language works, (2) become aware of the kinds of language that ESL learners produce and the reasons why they proceed through certain stages, and (3) understand the role and effects of grammatical consciousness

raising in the development of English as a second language. Prerequisite: 401 and 570 or consent of instructor.

540-3 to 12 (3 per topic) Studies in Applied Linguistics. Selected topics in applied linguistics. (a) Research methods, (b) pragmatics, (c) other. May be repeated as topics vary to a total of 12 hours of credit with consent of department. Maximum of 6 hours applicable toward a Master's degree. Prerequisite: one previous course in linguistics or consent of department.

541-3 Introduction to Second Language Acquisition. This course is an introduction to the key concepts and the major theoretical and methodological issues in second language acquisition research. The major developments in SLA in the areas of phonology, morphology, lexis, syntax, semantics and discourse will be examined and students will be provided with hands-on experience in describing and accounting for second language data. Students will also be given an opportunity to design and implement a data-based study in an area of interest to them. Prerequisite: 401 or consent of instructor.

542-3 Advanced Seminar in Second Language Acquisition. Research seminar in second language acquisition on selected topics such as universal grammar in SLA, language transfer, variation in SLA, second language learnability, etc. Prerequisite: 541 or consent of instructor.

546-3 Conversation Analysis: Pragmatics. (Same as Speech Communication 546.) Study of the pragmatics of everyday conversation: sequential organization, topical coherence, speech act rules and functions, contextual frames and background understandings. Emphasis on observational research methods and analysis of original data. Prerequisite: consent of instructor.

547-3 Conversation Analysis: Ethnomethodology. (Same as Speech Communication 547) Descriptive study of sequential organization of interaction. Students read research literature and learn methods for transcription and analysis in the conversation analytic tradition. Topics include openings and closings, adjacency pair organization, turn taking, overlap, assessments, pre-sequences, repair, topic, nonvocal activities, response, laughter, storytelling, argument, play and institutional contexts. Prerequisite: consent of instructor.

548-3 Lexicography. An introduction to the art and craft of dictionary-making: differences between dictionaries and other reference works; history of dictionaries around the world; how dictionaries are produced, evaluated, selected, and used; bilingual vs. monolingual dictionaries in the teaching and learning of English and other languages.

550-4 to 8 (4 per topic) Seminar in Theoretical Linguistics. Guided advanced research in (a) syntax and semantics, (b) phonology, (c) sociolinguistics, (d) selected topics. Sections (a) through (c) may be taken only once each. Section (d) may be repeated as topics vary. Prerequisite: consent of department.

570-4 Theory and Methods of TESOL. Theory and methods of teaching English to speakers of other languages, techniques and procedures in teaching most language skills, comparative and current methodology.

572-3 Materials Preparation in TESOL. Theory and practice in development of texts for the teaching of English to speakers of other languages. Prerequisite: 570 or consent of instructor.

573-3 Computer-Assisted Language Learning. An introduction to the use of microcomputers in the teaching of foreign languages, in particular the teaching of English to speakers of other languages. Course topics include: a survey of existing application programs used in language learning, review of research into the effectiveness of computer-assisted language learning and testing and development of basic skills in designing and programming language learning applications. Prerequisite: 570 or consent of instructor.

575-3 Language Testing. Discussion of different second language (L2) testing purposes, characteristics of good L2 tests, process of L2 test development, evaluation and revision of L2 tests, interpretation and reporting of L2 test results, current trends in L2 testing. Prerequisite: 570 or consent of instructor.

580-3 to 6 Seminar in Special Topics in TESOL. Selected topics in special areas of teaching English to speakers of other languages. (a) Administration of intensive English programs, (b) Teaching English abroad, (c) Selected topics. Sections (a) and (b) may be taken only once each. Section (c) may be repeated as topics vary. Prerequisite: 570 or consent of instructor.

581-3 Practicum in Teaching Oral English. Class observation and supervised practice teaching of speaking and listening skills in English to speakers of other languages; meets concurrently with Linguistics 100. Prerequisite: 402 and 570.

582-3 Course Design for TESOL. A review of issues and procedures in the design and implementation of courses for teaching English to speakers of other languages. Particular attention is given to recent developments such as content-based instruction. All major course components such as setting of objectives, syllabus design, content specification and evaluation are considered. In addition, resources available for addressing these issues will be discussed. Prerequisite: 570 or consent of instructor.

584-3 Teaching Composition in a Second Language. Analysis of current theories of composition in a second language, research on the nature, process, and applications of research for the teaching of writing in a second language. Prerequisite: 570 or consent of instructor.

585-3 Practicum in Teaching Written English. Objectives, methods and materials for a variety of ESOL composition courses. Observation and practice under supervision. Prerequisite: consent of instructor.

586-3 English for Specific Purposes. A course designed to familiarize students with key components of English language courses designed for speakers of other languages with specific needs or in well-defined settings. Case studies and sample courses are reviewed and students develop individual projects related to a content area or course component of their choice, e.g., needs assessment, syllabus design, materials development or teacher training. Prerequisite: 570 or consent of instructor.

587-3 Teaching Reading in a Second Language. Analysis of theories of reading in a second

language (L2) and research into the nature of L2 reading. Observation and practice in developing L2 reading materials and teaching techniques under supervision. Prerequisite: 570 or consent of instructor.

593-1 to 4 Research in Linguistics. Individual research under graduate faculty guidance. Prerequisite: consent of instructor.

597-1 to 8 Readings in Linguistics. Individual readings in linguistics under graduate faculty guidance. Prerequisite: consent of department.

599-1 to 6 Thesis. Minimum of three hours to be counted toward a Master's degree. Prerequisite: consent of department.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Management

(See Business Administration.)

Manufacturing Systems

E-mail: ylewis@siu.edu
butson@siu.edu

COLLEGE OF ENGINEERING

Abrate, Serge, Associate Professor, Ph.D., Purdue University, 1983; 1995.

Andrews, Paul, Associate Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1979; 1971.

Barbay, Joseph E., Jr., Associate Professor, Ph.D., University of Missouri-Columbia, 1971; 1970.

Besterfield, Dale H., Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1971; 1962.

Butson, Gary J., Associate Professor and *Chair*, Ph.D., University of Illinois, 1981; 1992.

Chang, Feng-Chang, Assistant Professor, Ph.D., Ohio State University, 1985; 1991.

Ferketich, Robert R., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1980; 1971.

Lindsey, Jefferson F., III, Professor, D. Engr., Lamar University, 1976; 1980.

Orr, James P., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1983; 1979.

Rong, Yiming, Assistant Professor, Ph.D., University of Kentucky, 1989; 1990.

Spoerre, Julie K., Assistant Professor, Ph.D., Florida State University, 1995; 1995.

Szary, Marek, Assistant Professor, Ph.D., Wroclaw (Poland), 1977; 1984.

Velasco, Tomas, Assistant Professor, Ph.D., University of Arkansas, 1991; 1993.

Weston, Alan J., Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1991; 1991.

Master of Science in Manufacturing Systems

Graduate work leading to a Master of Science degree in manufacturing systems is offered by the College of Engineering. The objective of the program is to develop manufacturing professionals who can design and implement modern manufacturing systems to increase productivity and improve product quality. Course offerings and research are available in manufacturing processes and control, quality control, and computer applications. The program provides advanced education for students with baccalaureate degrees in technology and also an excellent continuing education opportunity for individuals with technical degrees who wish to expand their education in the area of manufacturing systems.

Admission

Candidates for this program must be accepted by the Graduate School and the Department of Technology. Candidates should possess a bachelor's degree with a major in a technical area and have a GPA of no less than 3.0/4.0. A student whose undergraduate training is deficient may be required to take additional courses to compensate for deficiencies identified by the technology graduate program committee.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Program Requirements

The program in the thesis option requires a minimum of 30 semester hours of acceptable graduate credit, 18 semester hours of which is in manufacturing systems.

Students will complete a master's thesis, having 6 semester hours of credit, and be required to pass a comprehensive examination covering all of the student's graduate work and thesis.

Within the 30 semester hour requirement, students must complete the following core courses or their equivalents:

MATH 458-3 Statistical Methods in Business

MFGS 510-3 Recent Advances in Quality Assurance

MFGS 520-3 Computer-Aided Manufacturing II

MFGS 540-3 Product Reliability Theory

MFGS 560-3 Automated Factory Technology

A program of study including the above required courses (15 semester hours), the master's thesis (6 semester hours), and the remaining 9 semester hours will be selected by the graduate adviser and the student.

If a student prefers the non-thesis option, a minimum of 36 semester hours of acceptable graduate credit including the 15 semester hours of core courses is required. The student is expected to take at least 21 semester hours within the major department including no more than 3 semester hours of MFGS 592 to be devoted to the preparation of a research paper. In addition, each candidate is required to pass a written comprehensive examination.

Each student will select a minimum of 3 technology graduate faculty members to serve as a graduate committee, subject to approval of the director of the graduate program. The committee will:

1. approve the student's program of study,
2. approve the student's research paper topic,
3. approve the completed research paper, and
4. administer and approve the written comprehensive examination.

Additional Information

Teaching or research assistantships and fellowships are available for qualified applicants. Additional information about programs, courses, assistantships, and fellowships may be obtained from the College of Engineering or from the chair of the department.

Courses (MFGS)

510-3 Recent Advances in Quality Assurance. Study of recent advances in quality planning, quality measurement, design assurance, process control, participatory management, supplier quality, customer relations and improvement concepts. Prerequisite: Industrial Technology 475.

520-3 Computer-Aided Manufacturing II. Advanced study of the use of computers in the manufacture of products. Emphasis is placed on CAD/CAM integration, CAM generated data and current CAM languages. Prerequisite: Industrial Technology 445.

525-3 Computer Integrated Manufacturing. Theory and practice of using the computer to integrate the functional manufacturing areas into an effective system. Use of applications software

is emphasized. Prerequisite: Industrial Technology 445 and 475.

530-3 Mechanical Aspects of Robots. Advanced application of mechanics, mechanisms, hydraulics, pneumatics, strength of materials and machine design to robotics. Prerequisite: Industrial Technology 455.

535-3 Computer Control of Manufacturing Systems. Application of computer technology to the control of manufacturing equipment, processes and systems. Emphasis is placed on the hardware aspects from an overall systems viewpoint. Prerequisite: Industrial Technology 455.

545-3 Electrical and Electronic Aspects of Robots. Analysis of servo motors, actuators, sensors and noise and feedback technique that drive

robot manipulators. Prerequisite: Industrial Technology 455.

560-3 Automated Factory. Advanced study of the integration of robots, automated assemble, automated storage and retrieval systems, automated inspection and computer-controlled transfer systems. Economic justification and implementation are emphasized. Prerequisite: 520, Industrial Technology 455.

580-1 to 4 Seminar. Collective and individual study of issues and problems related to manufacturing systems. Graded *S/U*. Prerequisite: enrollment in the M.S. degree in manufacturing systems.

585-3 Research Methods. Study of research methods in manufacturing including the development of proposals, the use of statistics in the

analysis and communication of results. Prerequisite: 510 and Mathematics 458.

592-1 to 4 Special Investigations in Manufacturing Systems. Advanced topics in manufacturing systems. Topics are selected by mutual agreement of the student and the instructor. Prerequisite: consent of adviser.

599-1 to 6 Thesis.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Marketing

(See Business Administration)

Mathematics

E-mail: gradinfo@math.siu.edu

COLLEGE OF SCIENCE

Beintema, Mark, Assistant Professor, Ph.D., University of South Carolina, 1990; 1990. Commutative algebra and combinatorics.

Bhattacharyya, Bhaskar, Assistant Professor, Ph.D., University of Iowa, 1993; 1993. Order restricted statistical inference, I-projections, linear models, multivariate analysis.

Budzban, Gregory, Assistant Professor, Ph.D., University of South Florida, 1991; 1991. Probability on algebraic structures, markov random fields, neural networks.

Burton, Theodore A., Professor, Ph.D., Washington State University, 1964; 1966. Differential equations: ordinary, delay, functional, volterra, partial; mathematical biology; applied mathematics.

Chen, Pei-Li, Associate Professor, Ph.D., State University of New York at Buffalo, 1988; 1990. Nonlinear partial and ordinary differential equations, applied mathematics, mathematical biology, geometrical PDE.

Clark, Lane, Associate Professor, Ph.D., University of New Mexico, 1980; 1991. Combinatorics and graph theory.

Crenshaw, James A., Associate Professor, *Emeritus*, Ph.D., University of Illinois, 1967; 1967.

Danhof, Kenneth, Professor, Ph.D., Purdue University, 1969; 1969. Logic, combinatorics.

Dharmadhikari, Sudhakar, Professor, Ph.D., University of California, Berkeley, 1962; 1978. Statistics, sampling theory, probability, multivariate analysis.

Earnest, Andrew G., Professor, Ph.D., Ohio State University, 1975; 1981. Algebra and algebraic number theory, arithmetic theory of quadratic forms.

Feinsilver, Philip, Professor, Ph.D., New York University (Courant), 1975; 1978. Probability theory, representation theory.

Fitzgerald, Robert W., Professor, Ph.D., University of California-Los Angeles, 1980; 1982. Quadratic forms, algebra.

Foland, Neal E., Professor, *Emeritus*, Ph.D., University of Missouri, 1961; 1965.

Gates, Leslie D., Associate Professor, *Emeritus*, Ph.D., Iowa State University, 1952; 1961.

Gregory, John, Professor, Ph.D., University of California, Los Angeles, 1969; 1972. Optimization theory, numerical analysis, applied functional analysis.

Grimmer, Ronald C., Professor, Ph.D., University of Iowa, 1967; 1967. Differential equations, integral equations, applied mathematics.

Hooker, John W., Professor, Ph.D., University of Oklahoma, 1967; 1967. Ordinary differential equations, difference equations.

Hughes, Harry R., Associate Professor, Ph.D., Northwestern University, 1988; 1989. Stochastic processes, stochastic geometry.

Hunsaker, Worthen N., Professor, Ph.D., Washington State University, 1966; 1969. General topology, quasi-uniform spaces, ordered topological spaces, frames.

Jeyaratnam, Sakthivel, Professor, Ph.D., Colorado State University, 1978; 1981. Statistics, linear models, variance components, robust inference.

Kammler, David W., Professor, Ph.D., University of Michigan, 1971; 1971. Approximation theory, fourier analysis, numerical analysis, applications of mathematics.

Kim, Henry H., Assistant Professor, Ph.D., University of Chicago, 1992; 1995. Modular forms, algebra.

Kirk, Ronald B., Professor and *Chair*, Ph.D., California Institute of Technology, 1968; 1968. Probability (markov processes, diffusions, martin-gales), functional analysis.

Koch, Charles, Assistant Professor, *Emeritus*, Ph.D., University of Illinois, 1961; 1966.

Langenhop, Carl E., Professor, *Emeritus*, Ph.D., Iowa State University, 1948; 1961.

Lei, Junjiang, Assistant Professor, Ph.D., University of Oregon, 1991; 1994. Numerical analysis, approximation theory.

Mark, Abraham M., Professor, *Emeritus*, Ph.D., Cornell University, 1947; 1950.

Maxwell, Charles, Professor, *Emeritus*, Ph.D., University of Illinois, 1955; 1963.

Mohammed, Salah-Eldin A., Professor, Ph.D., University of Warwick, England, 1976; 1984. Functional differential equations, stochastic differential equations, global analysis.

Moore, Robert A., Associate Professor, *Emeritus*, Ph.D., Indiana University, 1961; 1965.

Neuman, Edward, Professor, Ph.D., University of Wroclaw, Poland, 1972; 1984. Numerical analysis, spline functions, approximation theory, special functions.

Olmsted, John M. H., Professor, *Emeritus*, Ph.D., Princeton University, 1940; 1960.

Paine, Thomas B., Assistant Professor, *Emeritus*, Ph.D., University of Oregon (Eugene), 1966; 1966.

Panchapakesan, S., Professor, Ph.D., Purdue University, 1969; 1970. Multiple decision procedures, reliability, order statistics.

Parker, George D., Associate Professor, Ph.D., University of California at San Diego, 1971; 1972. Differential geometry, classical geometry, linear programming, computer modeling of coal industry and environmental legislation.

Patula, William T., Professor, Ph.D., Carnegie-Mellon University, 1971; 1972. Ordinary differential equations, difference equations.

Pedersen, Franklin D., Associate Professor, *Emeritus*, Ph.D., Tulane University, 1967; 1965.

Pericak-Spector, Kathleen A., Associate Professor, Ph.D., Carnegie-Mellon University, 1980; 1981. Hyperbolic partial differential equations, continuum mechanics, science education.

Porter, Thomas, Assistant Professor, Ph.D., University of New Mexico, 1990; 1990. Combinatorial analysis, graph theory.

Redmond, Donald, Associate Professor, Ph.D., University of Illinois, 1976; 1979. Analytic number theory, elementary number theory, classical analysis, history of mathematics.

Skalsky, Michael, Professor, *Emeritus*, D.Nat.Sc., University of Gottingen, 1949; 1957.

Snyder, Herbert H., Professor, *Emeritus*, Ph.D., Lehigh University, 1965; Ph.D., University of South Africa, 1971; 1966.

Spector, Scott J., Professor, Ph.D., Carnegie-Mellon University, 1978; 1981. Continuum mechanics, elasticity, nonlinear partial differential equations.

Wallis, Walter D., Professor, Ph.D., University of Sydney, 1968; 1985. Combinatorics, neural networks.

Wilson, Joseph C., Professor, *Emeritus*, Ph.D., Louisiana State University, 1954; 1957.

Wright, Mary H., Professor, Ph.D., McGill University, Montreal, Quebec, 1977; 1980. Rings and modules: structure of modules, prime ideals and localization over serial rings with Krull dimension.

Yucas, Joseph, Professor, Ph.D., Pennsylvania State University, 1978; 1980. Algebra, combinatorics.

Zeman, Marvin, Professor, Ph.D., New York University, 1974; 1979. Partial differential equations, integro-differential equations, numerical analysis.

The Department of Mathematics offers graduate degree programs leading to the Master of Arts or Master of Science degree in mathematics and the Doctor of Philosophy degree in mathematics. Students in the master's program can choose from a rich assortment of courses in both pure and applied mathematics and statistics. Each master's degree candidate works closely with a professor in writing a research paper in an area of interest to the student. At the doctoral level, a student may specialize in any one of a large number of fields such as algebra, applied mathematics, combinatorics, computational mathematics, control theory, differential equations, numerical analysis, probability, or statistics. Interdisciplinary programs are also available.

Students interested in the teaching of mathematics may select a minor concentration in education within the Master of Science program in mathematics. Minor work for graduate degrees in other fields, which allow for a minor, is also offered.

Acceptance for graduate study in mathematics and subsequent continuation in the graduate program are at the discretion of the Department of Mathematics, provided that the student has been admitted to the Graduate School and meets the retention standards of the Graduate School. All applicants for the graduate program are considered for teaching assistantships. In order to

be considered for a fellowship the applicant must take the GRE exam and all applicants are strongly encouraged to take the GRE General Test.

In addition to general rules, regulations, and requirements of the Graduate School, the following specific requirements pertain to the degrees available in mathematics.

Master of Science Degree in Mathematics

Students will be considered for acceptance into the M.S. degree in mathematics program if they have completed an undergraduate major in mathematics or a strong undergraduate minor in mathematics together with a major in a closely related discipline.

Once accepted, the requirements are as follows:

1. The candidate must complete a total of at least 30 semester hours of graduate credit approved by the graduate adviser of which 15 hours must be at the 500 level and at least 21 hours must be in courses (exclusive of 400, 417, 458, 511, 592) offered by the Department of Mathematics. A minor concentration may be taken outside of the department if approved by the graduate adviser during the student's first semester in the master's program.
2. The candidate's program must include at least one 400- or 500-level course from each of 4 of the following areas: (1) pure and applied algebra; (2) pure analysis; (3) applied analysis; (4) geometry and topology; (5) probability and statistics. This requirement may be met in whole or in part by means of equivalent courses taken elsewhere prior to acceptance for graduate study in the department.
3. The candidate must prepare a research paper or thesis (3 hours credit in MATH 595 or 599) under the supervision of a research adviser and two other faculty members from the department. This committee will be appointed by the graduate adviser after consultation with all those involved.
4. The candidate must demonstrate satisfactory performance on a final oral examination covering the graduate course work and the research paper or thesis. This examination will be conducted by the 3 members of the candidate's committee and moderated by the research adviser. The student will pass the examination if the research adviser and at least 1 of the other 2 committee members so agree.

Master of Arts Degree in Mathematics

Students will be considered for acceptance into the M.A. degree in mathematics program if they have completed with distinction the equivalent of a strong undergraduate major in mathematics. Once accepted, the requirements are as follows:

1. The candidate must complete a total of 30 semester hours of graduate level mathematics courses of which at least 15 must be at the 500 level.
2. The candidate must complete with a grade of *B* or better each of the courses MATH 419, 421, 430, 452, and at least 3 of the courses MATH 501, 519, 530, 555. This requirement may be met in whole or in part by means of equivalent courses taken elsewhere.
3. The candidate must demonstrate the ability to read mathematical literature in French, German, or Russian. This may be certified by passing with a grade of *B* or better the research tool course 488 offered by the Department of Foreign Languages and Literatures, by passing with a score of 465 or better an examination given by the Educational Testing Service of Princeton, NJ, or by passing a suitable examination given by a faculty member from the Department of Mathematics who has been approved by the graduate adviser.

4. The candidate must prepare a thesis (3 hours credit in MATH 599) under the supervision of a thesis adviser and 2 other faculty members from the department. This committee will be appointed by the graduate adviser after consultation with all those involved.
5. The candidate must demonstrate satisfactory performance on a final oral examination covering the graduate course work and the thesis. This examination will be given by the 3 members of the candidate's committee and chaired by the thesis adviser. The student will pass the examination if the thesis adviser and at least 1 of the other 2 committee members so agree.

Doctor of Philosophy Degree

Students will be considered for acceptance into the doctoral program if they have completed with distinction a graduate program comparable to that required for a master's degree in mathematics, statistics, or computer science at SIUC. Additional evidence of outstanding scholarly ability or achievement (e.g., a high score on the advanced section of the Graduate Record Examination or published research papers of high quality) will lend strength to the application. Students must have completed 419, 421, 430, and 452 or their equivalent before entering the doctoral program.

Once admitted, the requirements are as follows:

1. The candidate must pass the departmental qualifying examination by the end of the February following the second fall semester in the doctoral program. This qualifying examination, which is given twice annually in February and September, covers 3 areas each of which is commensurate with a regularly scheduled 500 level graduate course at SIUC. After consultation with the graduate adviser candidates will choose the 3 areas over which they are to be examined, with 2 of 3 chosen from MATH 501, 519, 530, 580 including at least one of 501 and 519. The coursework in two courses chosen from the list of four above will not be counted toward completing the major area discussed in 3. below. The third area normally corresponds to another regularly scheduled 500 level mathematics course but with the approval of the graduate adviser the third area may be chosen from a related field outside the department. A candidate who fails the qualifying examination within the allotted time will be dropped from the doctoral program.
2. The candidate must demonstrate competence with two research tools. The ability to read mathematics in any one of the languages French, German, or Russian serves as a tool. This may be certified by passing with a grade of *B* or better the research tool course 488 offered by the Department of Foreign Languages and Literatures, by passing with a score of 465 or better an examination given by the Educational Testing Service of Princeton, NJ, or by passing a suitable examination given by a faculty member from the Department of Mathematics who has been appointed by the graduate adviser. A proficiency in computer programming will also serve as a research tool. This may be certified by passing with a grade of *B* or better CS 202 and CS 220 or by passing a suitable examination given by a faculty member from the Department of Mathematics who has been appointed by the graduate adviser.
3. Mathematics 501, 519, and 530, or their equivalent are required courses for all doctoral students. The candidate must complete a major (12 hours) and two minors (6 hours each) chosen from the following list: algebra, analysis, applied mathematics, combinatorics, differential equations, number theory, numerical analysis, probability and statistics, topology, and geometry. The course work in the major and minor areas must be at the 500 level and exclusive of the courses used to satisfy the qualifying exam.

4. The candidate must file a request with the graduate adviser to appoint a dissertation committee to supervise the remaining doctoral work. This committee shall consist of 5 members with the candidate's dissertation adviser as chair. At least one member of the committee must represent each of the minor areas, and the dissertation adviser and one other member will represent the major area. One member of the committee will be chosen from outside of the department. This committee will be appointed by the graduate adviser after consultation with the candidate, the proposed dissertation adviser, the department chair, and the other faculty members involved.
5. The candidate must pass a preliminary examination over the major and minor areas. This examination will normally be given after satisfying the research tools requirement and within 18 months after passing the qualifying examination. The preliminary examination will consist of a written examination over the major area and an oral examination over the major and the two minor areas. This examination will be prepared, administered, and evaluated by the dissertation committee. Any member of the graduate faculty may attend the oral portion of the preliminary examination and (at the discretion of the committee chair) question the candidate. The candidate will pass the preliminary examination provided that 4 members of the committee including the chair so agree. A report on the examination will be included with the candidate's official academic records. In the event that the candidate's performance is unsatisfactory, the committee as a whole shall decide on the time and content of an appropriate re-examination. A candidate who fails the re-examination will be dropped from the doctoral program.

In unusual circumstances a candidate who has passed the preliminary examination may wish to change the major area or dissertation adviser. This will be allowed if the graduate adviser and department chair so agree in which case the dissertation committee will be reconstituted in an appropriate manner. The revised committee may then prescribe additional course work and require the candidate to retake the preliminary examination.

6. The candidate must be officially admitted to candidacy for the Ph.D. degree. This will be done after all of the above requirements have been met.
7. The candidate must complete a dissertation (representing at least 24 hours in MATH 600) under the supervision of the candidate's dissertation adviser. The dissertation adviser and the other 4 members of the dissertation committee will evaluate the quality of the completed work which must conform to high literary and scholastic standards and constitute an original and publishable contribution to mathematics. A final oral examination will be conducted by the dissertation committee. During this examination the candidate will first present the major results of the dissertation and then respond to questions. Any member of the University graduate faculty may attend and (at the discretion of the dissertation adviser) ask related questions. The dissertation will be accepted provided the dissertation adviser and at least 3 of the other 4 members of the committee so agree.

For students interested in the doctoral degree program with an emphasis in computational mathematics, the entrance requirements are 419, 421, 452, and CS 451. Once students are admitted, the preceding paragraphs 1 through 7 apply except for the following. Courses for the qualifying exam are CS 555, one from 501 or 519, and one other 500 level mathematics course (preferably 549 or 575). For the preliminary examination, computer science can be a minor area. The program must also include mathematics 501, 519, and 549 (in lieu of 530) or their equivalents.

As a matter of policy, the Department of Mathematics does not provide any student working for a master's degree financial support for more than two years nor a Ph.D. student more than four years past the master's or master's equivalent.

Courses (MATH)

400-3 History of Mathematics. An introduction to the development of major mathematics concepts. Particular attention given to the evolution of the abstract concept of space, to the evolution of abstract algebra, to the evolution of the function concept, and to the changes in the concept of rigor in mathematics from 600 B.C. Does not count toward a mathematics major in the College of Liberal Arts or in the College of Science. Prerequisite: 319 and 352 or consent of instructor.

405-3 Intermediate Ordinary Differential Equations. Topics selected from linear systems, existence and uniqueness for initial value and boundary value problems, oscillation and stability. Prerequisite: 305.

406-3 Eigenfunction Analysis. Discrete and continuous models for the vibrating string; separation of variables and eigenfunction analysis; inner product spaces; operators on inner product spaces; the spectral theorem for Hermitian operators on finite dimensional spaces with applications; the Courant-Fisher max-min characterization of eigenvalues; the spectral theorem for compact Hermitian operators with applications to Sturm-Liouville boundary value problems and Fredholm integral equations. Prerequisite: 221 and 305.

407-3 Introduction to Partial Differential Equations. First order linear and quasilinear partial differential equations, characteristics, second order linear partial differential equations, classification of types, boundary value and initial value problems, well posed problems, the wave equation, domain of dependence, range of influence, Laplace's equation and Dirichlet problems, the maximum principle. Poisson's integral, fundamental solution of the heat equation. Prerequisite: 251, 305.

409-3 Introduction to Fourier Analysis. The Fourier synthesis and analysis equations for periodic and aperiodic functions on the reals and the integers; convolution; the calculus for finding Fourier transforms; operators associated with Fourier analysis; the FFT and FHT algorithms and fast convolution; generalized functions; the sampling theorem; wavelets; selected applications of Fourier analysis to partial differential equations, probability, music synthesis, time series, image processing, diffraction. Prerequisite: 221 and 305.

411-1 to 6 (1 to 3, 1 to 3) Mathematical Topics for Teachers. Variety of short courses in mathematical ideas useful in curriculum enrichment in elementary and secondary mathematics. May be repeated as topics vary. Does not count toward a mathematics major.

412-3 Problem Solving Approaches to Basic Mathematical Skills. Content of basic skills at all levels of education and the development of these skills from elementary school through college; emphasis on problem solving and problem solving techniques; determination of student

skills and proficiency level. Credit may not be applied toward degree requirements in mathematics. Prerequisite: 314 or equivalent.

419-3 Introduction to Abstract Algebra II. Solvable groups, maximal ideals, basis and dimension, elementary field extension theory, splitting fields, geometric constructions, elementary Galois theory, Galois group of a polynomial, solution of equations in radicals. Prerequisite: 319 or consent of instructor.

421-3 Linear Algebra. Fields, vector spaces over fields, triangular and Jordan forms of matrices, dual spaces and tensor products, bilinear forms, inner product spaces. Prerequisite: 221.

425-3 Theory of Numbers. Properties of integers, primes, divisibility, congruences, quadratic forms, diophantine equations, and other topics in number theory. Prerequisite: 319 or consent of department.

430-3 Introduction to Topology. Study of continuity, convergence, separation and compactness in the context of metric spaces and topological spaces. Prerequisite: 302 or 352 or consent of department.

435-3 Elementary Differential Geometry. An introduction to modern differential geometry through the study of curves and surfaces in \mathbb{R}^3 . Local curve theory with emphasis on the Serret-Frenet formulas; global curve theory including Fenchel's theorem; local surface theory motivated by curve theory; global surface theory including the Gauss-Bonnet theorem. Prerequisite: 251 and 221.

447-3 Introduction to Graph Theory. (Same as Computer Science 447.) Introduction to theory of graphs, digraphs, and networks and applications to electrical systems and computer science. Topics include blocks and cut-points, Eulerian graphs, trees, cycle and cocycle spaces, planarity and Kuratowski's Theorem, connectivity and Menger's Theorem, Hamiltonian graphs, colorability and Heawood's Theorem, flows in networks and Ford-Fulkerson Theorem, critical path analysis. Prerequisite: 349 or consent of instructor.

449-3 Introduction to Combinatorics. (Same as Computer Science 449.) An introduction to combinatorial mathematics with computing applications. Topics include selections and arrangements, generating functions, recursion, inclusion and exclusion, coding theory, block designs. Prerequisite: 349 or consent of instructor.

450-3 Methods of Advanced Calculus. Sequences and series of functions; partial differentiation; Jacobians; the implicit function theorem; the classical differential operators in general curvilinear coordinates; line, surface, volume integrals, the divergence and Stokes' theorems; transformation of variables in multiple integrals; integrals containing a parameter. Prerequisite: 251.

452-3 Introduction to Analysis. A rigorous development of one-variable calculus concepts including the real numbers, sets, limits of sequences, continuity of functions, differentiation, Riemann-Stieltjes integration, series of functions at a more advanced level than 352. Prerequisite: 251.

455-3 Introduction to Complex Analysis and Applications. Complex numbers, analytic functions, line integrals, the Cauchy-Goursat theorem and its implications, power series. Laurent series, polar and essential singularities, analytic continuation, contour integration, residue theorem, conformal mapping. Prerequisite: 251.

457-3 Methods of Quantitative Analysis. (Same as Business Administration 451.) Introductory survey of basic quantitative methods necessary for graduate study in business; designed for students with deficiencies in methods of quantitative analysis. Course consists of introduction to calculus, matrix algebra, and probability. Extensive use is made of business examples. Prerequisite: enrollment in Master of Business Administration program or consent of department; Mathematics 108 or equivalent.

458-3 Statistical Methods in Business and Industry. Basic probability concepts; random variables; univariate and joint distributions; Bernoulli, binomial, Poisson, normal, exponential, gamma, chi-square, t and F distributions; sampling distributions; estimation by the method of moments and the method of maximum likelihood; confidence intervals; hypothesis tests for normal, Bernoulli and Poisson distributions; simple regressions and analysis of variance problems. Prerequisite: 140 or equivalent and graduate standing in College of Business and Administration or the College of Engineering and Technology.

460-3 Transformation Geometry. Geometry as the study of properties invariant under congruences, similarities, affine transformations and projectivities. Prerequisite: 221 and 319.

471-3 Introduction to Optimization Techniques. (Same as Computer Science 471.) Nature of optimization problems. General and special purpose methods of optimization, such as linear programming, classical optimization, separable programming, integer programming and dynamic programming. Prerequisite: 221, 250. Computer Science 202.

472-3 Linear Programming. (Same as Computer Science 472.) Nature and purpose of the linear programming model. Development of the simplex method. Application of the model to various problems. Duality theory. Transportation. Assignment problems. Postoptimality analysis. Prerequisite: 221 and Computer Science 202.

473-3 Reliability Theory. Formulation of the concept of reliability in terms of probability theory. Failure distributions and failure rates. Elements of renewal theory. Age and block replacement policies, optimal replacement policies, optimal replacement policies for classes of failure distributions. Prerequisite: 480 or 483 or consent of department.

475-6 (3,3) Numerical Analysis. (Same as Computer Science 464.) An introduction to the theory and practice of computation with digital computers. Topics include the solution of nonlinear equations, interpolation and approximation, solution of

systems of linear equations, numerical integration, solution of ordinary differential equations, computation of eigenvalues and eigenvectors and solution of partial differential equations. Prerequisite: (a) 221 and 250 and Computer Science 202 or equivalent programming proficiency; (b) 305 and 475a.

480-4 Introduction to Probability. A comprehensive introduction to probability theory at a level suited to upper-division undergraduates and first-year graduate students. Topics include: event spaces, probability functions, combinatorics, generating functions, conditional probability, independence, random variables, probability distributions, expectations, moments, characteristic functions, inversion formulas, sums of independent random variables, the multivariate normal distributions, the central limit theorem, the weak and strong laws of large numbers. Prerequisite: 251.

481-3 Elements of Stochastic Processes. An introduction, including normal, Poisson, and Markov processes. Prerequisite: 380 or 480.

483-4 Mathematical Statistics in Engineering and Physical Sciences I. Introduction to statistical theory with applications in engineering and the physical sciences. Probability: axioms, distributions including noncentral distributions, moments and moment generating functions, order statistics. Statistical inference: point and interval estimation, testing hypotheses, likelihood ratio tests. Prerequisite: 250.

484-4 Mathematical Statistics in Engineering and Physical Sciences II. An introduction to linear models and the design of experiments with applications in engineering and the physical sciences. Analysis of the general linear model, basic designs and criteria, response surface analysis and factor analysis. Statistical computation. Prerequisite: 483 and 221 or consent of instructor.

485-3 Applied Statistical Analysis. Elements of survey sampling including simple random and stratified sampling, ratio and regression estimates; elements of nonparametric methods including the sign, Wilcoxon and Kruskal-Wallis tests; analysis of categorical data including loglinear models. Prerequisite: 480 or 483 or consent of instructor.

495-1 to 6 Special Topics in Mathematics. Individual study or small group discussions in special areas of interest under the direction of a member of the faculty. Prerequisite: consent of chair and instructor.

501-3 Real Analysis. Structure of sets of real numbers; Lebesgue measure; measurable functions; integration; convergence theorems; functions of bounded variation; absolutely continuous functions; LP spaces; general measure spaces; radon-Nikodym theorem; product measures and Fubini's theorem. Prerequisite: 452.

502-3 Modern Analysis. Banach spaces; bounded operators; Baire category theorem and its consequences; dual spaces; Hahn-Banach theorem; Hilbert spaces, Riesz representation theorem; Frechet derivatives; function spaces. Prerequisite: 501.

505-3 Ordinary Differential Equations. Existence and uniqueness theorems; general properties of solutions; linear systems; geometric theory of nonlinear equations; stability; self-adjoint

boundary value problems; oscillation theorems. Prerequisite: 452 and 421 or consent of instructor.

506-1 to 12 Advanced Topics in Ordinary Differential Equations. Selected advanced topics in ordinary differential equations chosen from such areas as: stability, oscillations, functional differential equations, perturbations, limit point and limit circle, boundary value problems. Prerequisite: consent of instructor.

507-3 Partial Differential Equations. Origins of PDE's. The wave equation, potential equation, and heat equation. Initial and boundary value problems and questions of well posedness. Fundamental solutions and the related Riemann, Green, and Neumann functions. Classification of linear and quasilinear PDE's. Theory of characteristics. The Cauchy-Kowalowski theorem. The max-min principle, the energy-integral method and questions of uniqueness. Questions of existence. Prerequisite: 407 and 501.

508-3 Integral Equations. Origins of integral equations. Volterra equations of the first and second kind. Fredholm equations of the first and second kind. Fredholm's alternative theorem. The resolvent equation. Orthonormal eigensystems of a symmetric Fredholm operator. The Hilbert-Schmidt expansion theorem and its applications to Sturm-Liouville problems. Exact and approximation methods of solution. Prerequisite: 452 and 406 or 421.

511-3 Advanced Topics in the Teaching of Mathematics. (Same as Curriculum and Instruction 529.) Selected advanced topics in the teaching of mathematics chosen from such areas as: pedagogical theories; instructional strategies; applications of mathematics; problem solving. This course is counted by the Mathematics department only as part of an approved minor. Prerequisite: consent of instructor.

512-1 to 21 Topics in Mathematics for Teachers of Elementary, Middle School and Junior High Mathematics. (a) Abstract Algebra. (b) Geometry. (c) Probability and Statistics. (d) Sets, Logic and Number Systems. (e) Applications of Mathematics. (f) Algebra. (g) History of Mathematics. This course is counted by the Mathematics department only as part of an approved minor.

513-1 to 27 Topics in Mathematics for Teachers of Secondary Mathematics. (a) Abstract Algebra. (b) Geometry. (c) Probability and Statistics. (d) Sets, Logic and Number Systems. (e) Applications of Mathematics. (f) Analysis. (g) Discrete Mathematics. (h) Topology. (i) Computer Simulation. This course is counted by the Mathematics department only as part of an approved minor.

516-8 (4,4) Statistical Analysis in the Social Sciences. (a) Descriptive statistics; graphic display of data; concepts of probability; statistical estimation, and hypothesis testing. Applications to social science data. (b) Matrix algebra; general linear model; multivariate statistics, ordinal and nominal measures of associations and causal modeling. Applications to social science data. This course does not give credit toward a mathematics major. Prerequisite: one year of high school algebra or equivalent.

519-3 Algebraic Structures I. Groups, subgroups, normal subgroups and homomorphism theorems, permutation groups, finite direct prod-

ucts, finite abelian groups, p-groups and Sylow's theorems, normal and subnormal series, Jordan-Hölder theorem. Rings and subrings, divisibility theory in integral domains, polynomial rings. Prerequisite: 419 or consent of department.

520-3 Algebraic Structures II. Algebraic field extensions; splitting fields, algebraic closure, separable and inseparable extensions; finite fields; norms and traces, the fundamental theorem of Galois theory. Free modules, torsion modules, tensor products of modules, finitely generated modules over principal ideal domains, application of abelian groups. Prerequisite: 519.

522-1 to 12 Advanced Topics in Algebra and Number Theory. Selected topics in modern algebra and number theory chosen from such areas as: group theory, commutative algebra, non-commutative algebra, field theory, representation theory, analytical number theory, algebraic number theory, additive number theory. Diophantine approximations, Dirichlet series and automorphic form. Prerequisite: consent of instructor.

525-3 Number Theory. Introduction to modern analytic and algebraic techniques used in the study of quadratic forms, the distribution of prime numbers, diophantine approximations and other topics of classical number theory. Prerequisite: 425.

530-3 General Topology. Topological spaces, continuous functions, product topology, convergence, separation and countability, compactness, connectedness, local properties, metrizable, compact-open topology. Prerequisite: 430, 452.

531-3 Algebraic Topology. Simplicial complexes. Simplicial approximation. Chain complexes. Simplicial homology. Singular homology. Applications to spheres and Euclidean spaces. Universal coefficient theorem. Cohomology. Prerequisite: 419, 430 or 530.

532-1 to 12 Advanced Topics in Topology and Geometry. Selected advanced topics in topology and geometry chosen from such areas as: metrization, topological groups, uniform spaces, homotopy theory, covering spaces, fixed point theory, Poincaré duality, differential topology, categorical topology, ordered topological spaces, complex manifolds, fibre bundles, vector bundles, sheaf theory, differential geometry, Morse theory, relativity. Prerequisite: consent of instructor.

536-3 Differential Geometry. Basic manifold theory, linear connections, Riemannian geometry, DeRham cohomology, applications. Prerequisite: 421, 430 or 435.

549-3 Combinatorial Theory. Graph theory: review of basic concepts, algebraic graph theory, trees, planarity, Ramsey's theorem, factorizations. Block designs: balanced incomplete block designs, finite geometries, triple systems, arrays. Introduction to algebraic coding theory. Introduction to modern cryptography. Prerequisite: 449 or consent of department.

551-3 Functional Analysis. Topological vector spaces; weak topologies; bounded and unbounded operators in Hilbert space; spectral theory; distributions; Sobolev spaces; normed rings; normed algebras. Prerequisite: 502.

553-1 to 12 Advanced Topics in Analysis and Functional Analysis. Advanced topics in analysis and functional analysis from such areas as: harmonic analysis, approximation theory, inte-

gration theory, advanced complex variables, topological vector spaces, operator theory, Banach algebras, distribution theory. Prerequisite: consent of instructor.

555-3 Complex Variables. Extended complex plane; Cauchy-Riemann equations: conformality; analytic continuation; power series; elementary functions; Cauchy integral theorem and consequences; Cauchy integral formula; maximum modulus principle; Liouville's theorems; Laurent expansion; residue theorem and evaluation of real integrals; principle of argument; Rouché's theorem. Prerequisite: 452.

559-1 to 12 Advanced Topics in Combinatorics. Selected advanced topics in combinatorics chosen from such areas as: graph theory; combinatorial designs; enumeration; random graphs; finite geometry; coding theory; cryptography; combinatorial algorithms. Prerequisite: consent of instructor.

560-3 Calculus of Variations. The basic problems of calculus of variations. The classical necessary conditions and their application. Canonical form of the Euler-Lagrange equations and Hamilton's principle. Fields and sufficient condition. Pontryagin's necessary condition and its application to control theory and to the classical problems of the calculus of variations. Prerequisite: 452.

566-3 Introduction to Continuum Mechanics. A rigorous development of continuum mechanics including: elements of tensor analysis; kinematics; balance of mass, linear momentum, and angular momentum; the concept of stress; constitutive equations for fluid and solid bodies; the principle of frame indifference. Prerequisite: 450 or 452 and one of 406, 421, 435.

569-1 to 12 Advanced Topics in Applied Mathematics. Selected advanced topics in applied mathematics chosen from such areas as: continuum mechanics; electromagnetic theory; control theory; mathematical physics. Prerequisite: consent of instructor.

570-1 to 12 Advanced Topics in Optimization. Selected advanced topics in optimization and operations research chosen from such areas as: calculus of variations, optimal control theory, nonlinear programming, convex analysis, nonsmooth analysis, new flows, advanced computer simulation, large scale linear programming. Prerequisite: consent of instructor.

572-1 to 12 Advanced Topics in Numerical Analysis. (Same as Computer Science 564.) Selected advanced topics in numerical analysis chosen from such areas as: approximation theory, numerical solution of initial value problems; numerical solution of boundary value problems, numerical linear algebra, numerical methods of optimization, functional analytic methods. Prerequisite: consent of instructor.

574-3 Approximation Theory. Existence, uniqueness, and characterization of best approximations in normed linear spaces; projection methods for good approximation: the Weierstrass, Muntz-Szasz, and Stone-Weierstrass theorems; degree of approximation and the Jackson theorems; construction of optimal min-max and least squares approximation using rational functions, splines, exponential sums. Prerequisite: 452, 475a and 406 or 421.

575-3 Matrix Computations. An introduction to modern numerical linear algebra including: vector and matrix norms; Householder, Givens, and Gauss transforms; factorization methods for solving systems of linear equations with roundoff error analysis; QR and SVD methods for solving linear least squares problems; the QR algorithm for computing the eigenvalues of a matrix. Prerequisite: 475a and one of 406, 421.

580-3 Statistical Theory. An introduction to mathematical statistics. Estimation theory including such topics as the Cramer-Rao and Chapman-Robbins inequalities, and the Rao-Blackwell theorem. Testing hypotheses with emphasis on the monotone likelihood ratio and the exponential family. A short introduction to Bayes and other decision procedures. Prerequisite: 480 or 483.

581-3 Probability. General probability spaces, review of measure and integration; product spaces, product measures, Fubini's theorem. Probability and random variables: induced measures, distribution functions, expectations, types of convergence, independence, characteristic functions. Sums of independent random variables: tail events and tail functions; Borel Cantelli lemma, zero-one law; Kolmogorov's inequality, convergence of series, the Strong Law of Large Numbers. Prerequisite: a concurrent course in real variables (501).

582-1 to 6 Advanced Topics in Probability. Selected advanced topics in probability chosen from such areas as: martingales, Markov processes, Brownian motion, infinitely divisible laws. Prerequisite: consent of instructor.

583-1 to 12 Advanced Topics in Statistics. Selected advanced topics in statistics chosen from such areas as: advanced linear models, advanced experimental design, multivariate statistical analysis, decision theory, advanced nonparametric theory. Prerequisite: consent of instructor.

585-1 to 2 Statistical Consulting. Consulting with university researchers under the supervision of a member of the statistics faculty. A write up of each consultation will be required. Prerequisite: 484 or 485 and consent of instructor.

590-1 to 6 Contemporary Mathematics Research. Lectures on various mathematical topics of current research interest by members of the department and by distinguished visitors. Prerequisite: consent of the graduate adviser.

592-1 to 6 Advanced Topics in Mathematics for Teachers. (a) Algebra. (b) Geometry. (c) Analysis. (d) Probability and Statistics. (e) Discrete Mathematics. Credit not applicable to graduate program in mathematics.

595-1 to 12 per topic Special Project. An individual project, including a written report. (a) Algebra. (b) Geometry. (c) Analysis. (d) Probability and Statistics. (e) Mathematics Education. (f) Logic and Foundations. (g) Topology. (h) Applied mathematics. (i) Differential Equations. (j) Number Theory. Graded S/U only. Prerequisite: consent of instructor.

599-1 to 6 Thesis. Minimum of three hours to be counted toward the Master of Arts degree.

600-1 to 30 (1 to 16 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree.

601-1 per semester Continuing Enrollment. For those graduate students who have not fin-

ished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research,

or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Mechanical Engineering and Energy Processes

E-mail: judi@engr.siu.edu

COLLEGE OF ENGINEERING

Agrawal, Om, Associate Professor, Ph.D., University of Illinois-Chicago, 1984; 1985. CAD/Simulation of mechanical systems.

Blackburn, James W., Associate Professor, Ph.D., University of Tennessee, Knoxville, 1988; 1995. Chemical and bioprocesses reduction and control of organic wastes/by-products.

Chen, Juh W., Professor and *Dean*, Ph.D., University of Illinois, 1959; 1965. Coal conversion processes, supercritical extraction.

Chu, Tsuchin P., Assistant Professor, Ph.D., University of South Carolina, 1982; 1990. CAD/CAM, computer graphics, optical methods in experimental mechanics and manufacturing, image processing.

Don, Jarlen, Associate Professor, Ph.D., Ohio State University, 1982; 1985. Composite materials, surface effects, carbon materials.

Farhang, Kambiz, Assistant Professor, Ph.D., Purdue University, 1989; 1990. CAD/CAM, kinematics, dynamics, control and stability of flexible and rigid-body mechanical, electromechanical, mechanical-drive systems; manufacturing processes and process control.

Helmer, Wayne A., Professor, Ph.D., Purdue University, 1974; 1974. Acoustics, fluid bed combustion, energy conservation, solar energy, direct contact heat transfer.

Hesketh, Howard E., Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1968; 1968. Air pollution control, hazardous materials management, fluid bed combustion, material handling, engineering economics.

Hippo, Edwin J., Professor, Ph.D., Pennsylvania State University, 1977; 1984. Coal liquefaction, coal conversion, chemical and physical cleaning of coal, coal structure, carbon materials, STM.

Jefferson, Thomas B., Professor, *Emeritus*, Ph.D., Purdue University, 1955; 1969.

Kent, Albert C., Professor, Ph.D., Kansas State University, 1968; 1966. Energy conservation, solar, heat transfer.

Koc, Rasit, Associate Professor, Ph.D., University of Missouri-Rolla, 1989; 1994. Nonstoichiometry of oxides; sintering of oxide and non-oxide ceramics, methods of preparing high purity oxides from organometallics, perovskites for use as high temperature electrodes, microwave absorbing composites, synthesizing submicron carbide, nitride and carbonitride powders; application of solar energy for processing of advanced ceramics and composites.

Kulkarni, Manohar, Assistant Professor, Ph.D., University of Missouri-Columbia, 1986; 1993. Thermal sciences and engineering, controls.

Lalvani, Shashi B., Professor and *Acting Chair*, Ph.D., University of Connecticut, 1982; 1982. Electrochemical engineering, and coal cleaning and conversion.

Muchmore, Charles B., Professor, Ph.D., Southern Illinois University at Carbondale, 1969; 1966. Coal conversion and cleaning, alcohol production, water pollution control.

O'Brien, William S., Associate Professor, Ph.D., West Virginia University, 1972; 1973. Coal gasification and combustion, coal cleaning, carbon materials, mass transfer design, air and water pollution control.

Orthwein, William C., Professor, *Emeritus*, Ph.D., University of Michigan, 1958; 1965.

Rajan, Suryanarayaniah, Professor, Ph.D., University of Illinois, 1970; 1977. Fluidized bed combustion, pulse combustion, engine fuels, combustion and pollution control.

Swisher, James H., *Emeritus*, Professor, Ph.D., Carnegie-Mellon, 1963; 1983.

Tempelmeyer, Kenneth E., Professor, *Emeritus*, Ph.D., University of Tennessee, 1969; 1979.

Wittmer, Dale E., Associate Professor, Ph.D., University of Illinois, 1980; 1986. High temperature materials & testing, ceramics whisker synthesis, ceramic composites.

Wright, Maurice, Professor, Ph.D., University of Wales, United Kingdom, 1962; 1984. Fiber reinforced composites and fracture mechanics.

Master of Science in Mechanical Engineering

Graduate work leading to the Master of Science degree in mechanical engineering is offered by the College of Engineering. The program is designed to provide advanced study in air pollution control, mass and heat transfer, coal conversion, electrochemical processes, thermal science, thermal systems design, solar systems design, chemical and biochemical processes, mechanical systems, computer-aided design, composite materials and ceramics.

Admission

Students seeking admission to the graduate program in mechanical engineering must meet the admission standards set by the Graduate School and have a bachelor's degree in engineering or its equivalent. A student whose undergraduate training is deficient may be required to take coursework without graduate credit.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted. The application form can be obtained from the Department.

Requirements

Each student majoring in mechanical engineering will develop a program of study with a graduate adviser and establish a graduate committee of at least three members at the earliest possible date. A student may with the approval of a graduate faculty committee and the department chair also take courses in other branches of engineering, or in areas of science and business, such as physics, geology, chemistry, mathematics, life science, administrative sciences, or computer science. A thesis committee of at least three members will approve the thesis and the comprehensive oral exam.

For a student who wishes to complete the requirements of the master's degree with a thesis, a minimum of thirty semester hours of acceptable graduate credit is required. Of this total, eighteen semester hours must be earned in the Department of Mechanical Engineering and Energy Processes. Each candidate is also required to pass a comprehensive oral examination covering all of the student's graduate work including thesis.

If a student prefers the non-thesis option, a minimum of thirty-six semester hours of acceptable graduate credit is required. The student is expected to take at least twenty-one semester hours within the Department of Mechanical Engineering and Energy Processes including no more than three semester hours of the appropriate 592 course to be devoted to the preparation of a research paper. In addition, each candidate is required to pass a written comprehensive examination. An oral presentation of the paper may be required.

Each non-thesis student will select a minimum of three engineering graduate faculty members to serve as a graduate committee, subject to the approval of the chair of the department. The committee must include at least one member from one of the other engineering departments and will:

1. approve the student's program of study,
2. approve the student's research paper topic,
3. approve the completed research paper, and
4. administer and approve the written comprehensive examination.

Teaching or research assistantships and fellowships are available for qualified applicants. Additional information about the program, courses, assistantships, and fellowships may be obtained from the College of Engineering or the Department of Mechanical Engineering and Energy Processes.

Courses (ME)

Graduate work in the Department of Mechanical Engineering and Energy Processes is offered toward a concentration for the Master of Science degree in engineering. Safety glasses are required for some of the courses in this department. Four-hundred level courses in this department may be taken for graduate credit unless otherwise indicated in the course description.

400-3 Power and Refrigeration Cycles. Use of engineering thermodynamics in analysis of power and refrigeration cycles. Detailed treatment of various gas and vapor power cycles including

combined gas and steam cycles. Thermodynamics of combustion. Gas and vapor refrigeration cycles. First and Second Law analysis and turbo-machinery. Prerequisite: Engineering 300.

401-1 Thermal Measurements Laboratory. Study of basic measurements used in the thermal sciences. Calibration techniques for temperature and pressure sensors. Thermal measurements under transient and steady-state conditions. Applications include conduction, convection and radiation experiments. Uncertainty analysis. The handling and reduction of data. Prerequisite: 302, 303.

402-3 Heat Exchange Equipment Design. Engineering design of heat exchange equipment such as boilers, evaporators, cooling towers, furnaces and systems involving combinations of conduction, convection and radiation mechanisms. Emphasis is placed on application of basic principles of heat transfer and fluid mechanics to the design of heat exchange equipment. Student are encouraged to work "open-ended" problems with multiple possible solutions. Prerequisite: 302, Engineering 222, 313.

403-1 Mechanical Engineering Measurements Laboratory. Laboratory to familiarize students with the use of instruments to measure time, distance, velocity, acceleration, strain, fluid flow and turbulence. Instruments include micrometers, laser distance meters, stroboscopes, oscilloscopes, incremental rotary encoder, LVDT, load cells, accelerometers, analog/digital converters, pressure transducers and related equipment. Prerequisite: 303, Engineering 311.

404-4 Optimization of Process Systems. Simulation and optimization of process systems based upon engineering science and economic fundamentals. Analysis and correlation of experimental engineering data and use of correlated data in simulation, design and decision making. Design of systems using economics and continuous and discrete optimization methods encountered in engineering practice. Use of the computer is required. Prerequisite: Engineering 361, Mathematics 305 and senior standing in engineering.

405-3 Internal Combustion Engines and Gas Turbines. Operation and performance characteristics of Otto, Diesel, Wankel engines and gas turbines. Methods of engine testing, types of fuels and their characteristics, fuel metering systems, engine combustion analysis as related to engine performance, fuel characteristics and air pollution, exhaust gas analysis and air pollution control. Prerequisite: Engineering 300.

406-3 Thermal Systems Design. Applications of the principles of engineering analysis to the design of thermal systems. Consideration of such systems as refrigeration, air conditioning, spacecraft thermal control and cogeneration. Numerical analysis and solution of an open-ended design problem. Prerequisite: 402 and Engineering 351.

408-3 Energy Conversion Systems. Principles of advanced energy conversion systems; nuclear power plants, combined cycles, magnetohydrodynamics, cogeneration (electricity and process steam) and heat pumps. Constraints on design and use of energy conversion systems; energy resources, environmental effects and economics. Prerequisite: 301 or 400.

410-3 Applied Chemical Thermodynamics and Kinetics. Designed for students interested in chemical and environmental processes and materials science. Topics covered include applications of the Second and Third Laws of Thermodynamics, solution theory, phase equilibria, sources and uses of thermodynamic data, classical reaction rate theory, kinetic mechanisms and the determination of rate-determining steps in chemical reactions. Prerequisite: Chemistry 200, 201, Engineering 300 or consent of instructor.

414-3 Noise and Vibration Control. Principles of engineering acoustics and vibration and their application to noise and vibration control techniques. Laboratory experience demonstrates techniques for control and reduction of vibration and noise. Prerequisite: 436 and consent of instructor.

416-3 Air Pollution Control. Engineering control theory, procedure, equipment, and economics related to control of particulate, gaseous, and toxic air emissions. The environmental impacts due both to controlling and not controlling emissions are considered. Understanding of the basics is evaluated as students design control equipment, specify and troubleshoot control systems and predict the impacts for each major type of control system. Prerequisite: senior standing.

418-1 Air Quality Laboratory. This laboratory consists of design, construction, and use of systems to measure and analyze ambient atmospheric pollution. Safety glasses required. Prerequisite: concurrent enrollment in 416.

419-3 Hazardous Waste Incineration. Incineration techniques, procedures and systems are presented for solid waste disposal and for remedial site clean-up activities. This includes regulations, waste handling, emission controls and residue disposal. Thermodynamics, chemistry and equipment are discussed, including heat recovery. Prerequisite: 416 or consent of instructor.

422-3 Applied Fluid Mechanics for Mechanical Engineers. Applications of fluid mechanics in internal and external flows. The mathematical basis for inviscid and viscous flows calculations is developed with application to pipe and duct flows; external flow about bodies; drag determination; turbomachinery; and reaction propulsion systems. Semester design project of a fluid mechanical system. Prerequisite: Engineering 300, 313 and Mathematics 305.

423-3 Compressible Flows. Foundation of high speed fluid mechanics and thermodynamics. One-dimensional flow, isentropic flow, shock waves and nozzle and diffuser flows. Flow in ducts with friction and heat transfer. Prandtl-Meyer flow. Compressibility effects in reaction propulsion systems. Semester design project. Prerequisite: Engineering 300, 313.

430-3 Kinematic Synthesis. Kinematic synthesis of linkages, single loop and multiple loop mechanisms, and geared linkages. Vector synthesis of spatial mechanism and its computer simulation. Prerequisite: 310.

435-3 Design of Mass Transfer Processes. Design principles of mass transfer processes. The rate mechanism of molecular, convective and interphase mass diffusion. The design of selected industrial mass transport process operations such as absorption, humidification, water cooling, dry-

ing and distillation. Prerequisite: 302 and Engineering 313.

436-3 Mechanical Engineering Controls. Analysis and design of controls for mechanical engineering systems: mechanical, electrical thermal, fluid and combinations of these. Prerequisite: Engineering 260b, 300, 335, 351, Mathematics 305.

440-3 Heating, Ventilating and Air Conditioning Systems Design. Principles of human thermal comfort. Heating and cooling load analysis. HVAC system design. Air conditioning processes. Prerequisite: 302 and Engineering 300.

442-3 Passive Solar Design. Design of solar heating systems for residence with emphasis on passive systems. Heat flow and heat loss. Estimating heat loss and heating requirements of buildings. Energy conserving building design. Predicting performance and economics of a system. Prerequisite: 302 and Engineering 300.

446-3 Energy Management. Fundamentals and various levels of analysis for energy management of commercial buildings and industrial processes and buildings. Use of energy management systems and economic evaluations are required in course projects. Prerequisite: 302, Engineering 300, 313.

462-3 Physical Metallurgy. Structure of metals. Dislocation theory and plasticity. Solid state diffusion. Thermodynamics of solutions and phase diagrams. Phase transformations. Fracture mechanics. Creep and fatigue. Prerequisite: Engineering 312.

463-3 Introduction to Ceramics. Structure and physical properties, mechanical properties, processing and design of ceramics. Prerequisite: Engineering 312 or equivalent.

470-3 Mechanical System Vibrations. Linear Vibration analysis of mechanical systems. Design of mechanical systems to include effects of vibration. Prerequisite: Engineering 260b and 351, Mathematics 305.

472-3 Materials Selection for Design. Interaction of material design process with material selection criteria. Comparison of materials properties, processes and fabrication. Project work includes design models, material selection rationale, oral presentation of projects, construction of mock-up models and theoretical design problems in the area of the student's specialization. Prerequisite: Engineering 222, 312.

475-3 Machine Design I. Design of machines using bearings, belts, clutches, chains and brakes. Develops application of the theory of fatigue, power transmission and lubrication to the analysis and design of machine elements. Prerequisite: Engineering 222, 311, 351.

476-3 Machine Design II. Design of machines using gears, springs, screws and fasteners, and adhesives. Matching power sources to driven machines. Prerequisite: 475.

477-3 Fundamentals of Computer-Aided Design and Manufacturing. Introduction to the concepts of computer-aided design and manufacturing (CAD/CAM). Subjects include computer graphics, geometric modeling, engineering analysis with FEM, design optimization, computer numerical controls, project planning and computer integrated manufacturing. (CIM). Students are

required to use computer packages for projects. Prerequisite: 475 or consent of instructor.

500-3 Advanced Engineering Thermodynamics. Principles of kinetic theory and classical statistical mechanics applied to thermodynamic systems. Statistical interpretation of the equilibrium state and thermodynamic properties of engineering systems. Introduction to irreversible thermodynamics with engineering examples. Prerequisite: Engineering 300.

501-3 Transport Phenomena. Mechanism of heat, mass and momentum transport on both molecular and continuum basis. Estimation of transport properties. Generalized transport equations in one- or three-dimensional systems. Analogy of mass, heat and momentum transfer. Macroscopic balances, simultaneous mass and heat transfer. Prerequisite: 302.

502-3 Conduction Heat Transfer. Engineering considerations involving the construction of mathematical and numerical models of conduction heat transfer and the interpretation of results of analyses. Prerequisite: 302.

503-3 Convective Heat Transfer. Laminar and turbulent forced convection heat transfer over surfaces and inside tubes, including non-circular cross sections. Developing flows. Laminar free convection. Emphasis throughout is on the analytical approach. Prerequisite: 302.

504-3 X-Ray Diffraction and Electron Microscopy. (Same as Physics 571.) X-ray physics. Geometry of crystals. Scattering of X-ray by atoms, crystals and noncrystalline matter. Kinematical theory of diffraction. Powder method, Laue method. Electron optics. Formation and analysis of diffraction patterns. Imaging techniques. Image contrast theories. Analysis of crystal defects. Advanced analytical electron microscopes.

507-3 Combustion Phenomena. Basic combustion phenomena-chemical rate processes-flame temperature, burning velocity, ignition energy, quenching distance and inflammability limits-laminar and turbulent flame propagation-aerodynamics of flame-gaseous detonations-two phase combustion phenomena-fluidized bed combustion. Prerequisite: Engineering 300.

509-3 Thermal Radiation Heat Transfer. Review of radiation fundamentals. Prediction of radiative properties using classical electromagnetic theory. Properties of real materials. Governing equations between blackbody and graybody surfaces. Exchange of radiation between nondiffuse, nongray surfaces. Radiation in the presence of other energy transfer modes. Approximate and computer solution techniques. Prerequisite: 302.

510-3 Electrochemical Engineering. Principles underlying electrochemical processes. Transformation of chemical and electrical energy. Application of fundamental electrochemical laws to industrial processes, energy conversion, corrosion and reactor design. Prerequisite: consent of instructor.

513-3 Theory of Plasticity. (Same as Civil Engineering 553). Yield criteria kinematic and isotropic strain hardening; flow rules for plastic strain, elastic-plastic bending and torsion; slipline field theory; plane strain problems; residual stresses and limit analysis. Prerequisite: Engi-

neering 311 and Mathematics 305, or consent of instructor.

520-3 Coal Conversion and Combustion Processes. The major present day and proposed processes converting coal to other energy forms (gaseous and liquid fuels, coke, steam, electricity, etc.). Coal properties and chemical reaction relationships affecting conversion process paths. Design of coal gasification, liquefaction, combustion and carbonization reactor systems. Environmental assessment and cost considerations related to coal conversion. Prerequisite: graduate standing or consent of instructor.

525-3 Small Particle Phenomena. Small particle formation, behavior, properties, emission, collection, analysis and sampling. Includes atomization, combustion, transport of suspension and sols, filtration, light scattering and movement patterns of mono and polydisperse particles and use of a device to measure size, size distribution and one other physical property of an aerosol. Prerequisite: graduate standing.

531-4 Reaction Engineering and Rate Processes. Chemical kinetics of homogeneous and heterogeneous reactions, kinetic theories, mechanism and mathematical modeling. Reactor design. Design of multiple reactions; temperature and pressure effects. Nonisothermal and nonadiabatic processes. Non-ideal reactors. Prerequisite: 435.

532-3 Separation Processes and Equilibrium Operations. Phase equilibrium, multistage calculations, graphical methods, unsteady-state stagewise operations. Multicomponent systems. Rate separation processes. Applications in processing industry. Prerequisite: 435.

535-3 Computer Aided Analysis of Mechanical Systems I. Computer aided kinematic and dynamic analysis of planar mechanism: topics will include formulation of kinematic and dynamic equations of motion for planar systems. Automatic generations of kinematic constraint such as revolute joint, translation joint, etc. Numerical techniques for solution of nonlinear, differential, and algebraic equations, application of these techniques to planar mechanism and robotic systems. Prerequisite: 310.

536-3 Computer Aided Analysis of Mechanical Systems II. Computer aided kinetic and dynamic analysis of spatial mechanical systems. Topics will include: formulation of kinematic and dynamic equations of motion of spatial systems using Euler angles and quaternions, automatic generation of kinematic constraints such as spherical joints, universal joints, etc., numerical methods for spatial mechanisms, modeling of spatial mechanisms, general purpose software development and its application. Prerequisite: 535.

537-3 Nonlinear Vibrations. Dynamic response and stability of nonlinear systems. Examples and sources of nonlinearity. Various techniques for studying dynamic behavior or nonlinear systems. Prerequisite: 470 or consent of instructor.

538-3 Applied Optimal Design and Control of Dynamic Systems. Unconstrained and Constrained Mechanical-System Optimization Problems; Variational Calculus; Continuous Optimal Control; The Maximum Principle and Hamilton-Jacobi Theory; Dynamic-Systems Optimum-Control Examples; Design Sensitivity Analysis; Numerical Methods for Dynamic-System Design and

Control Problems; Application of the above techniques to Large Scale Dynamic Systems. Prerequisite: 470 or equivalent.

540-3 Introduction to Continuum Mechanics. Tensor analysis applied to continuum mechanics: stress and strain and their invariance, equations of compatibility, constitutive equations - including linear stress-strain relations. Prerequisite: Mathematics 305, Engineering 311, graduate standing in engineering.

555-3 Materials Processing. Course to cover a multitude of topics in the processing of metals, ceramics and, to a lesser extent, polymers. Example are: materials beneficiation, extraction, solidification, sintering and thin film deposition; topics for which the scientific basis for the processes is well established. Prerequisite: 410 and Engineering 312 or consent of instructor.

562-3 Environmental Degradation of Materials. Course designed for majors in engineering and the physical sciences. Topics covered include general corrosion, oxidation, hydrogen embrittlement, stress corrosion cracking and fine particle erosion. Approach will draw on principles of chemistry and materials science. Prerequisite: Chemistry 222 and one of the following: 460, 462 and Engineering 312, or consent of instructor.

565-3 Finite Element Analysis. (Same as Civil Engineering 551). Finite element analysis as a stress analysis or structural analysis tool. Derivation of element stiffness matrices by various means. Application to trusses, plane stress/strain and 3-D problems. Dynamic and material nonlinearity problems. Prerequisite: Engineering 311 and Mathematics 305.

566-3 Advanced Mechanics of Materials. (Same as Civil Engineering 557) Advanced topics in mechanics of materials including: elasticity equations; torsion of non-circular sections; generalized bending including curved beams and elastic foundations; shear centers; failure criteria including yielding, fracture and fatigue; axisymmetric problems including both thick and thin walled bodies; contact stresses; and stress concentrations. Prerequisite: Engineering 222 and 311.

580-1 to 2 Seminar. Presentations of topics in the broad areas of mechanical engineering such as thermal, mechanics, materials and acoustics. Prerequisite: enrollment in program leading to Master of Science of Mechanical Engineering.

582-1 Experimental Research Tools. Topics important to engineering graduate students engaging in research. These topics include: laboratory safety, statistical data analysis, experimental design, library research and chemical hygiene. Prerequisite: graduate enrollment in Engineering.

583-1 Technical Research Reporting. Analysis of technical and scientific writing: journal article, thesis, research paper. Guidelines and principles for writing engineering research literature and proposals. Term project involving thesis or research paper proposal to meet department requirements. Prerequisite: 582, consent of instructor.

592-1 to 4 Special Investigations in Engineering. Advanced topics in thermal and environmental engineering. Topics are selected by mutual agreement of the student and instructor. Four hours maximum course credit. Prerequisite: consent of instructor and department chair.

593-3 Special Topics in Mechanical Engineering. Studies of special topics in various areas in mechanical engineering. Such topics as coal refining, energy conversion, thermal systems, mechanics, robotics, CAD/CAM, TOM and engineering materials. Prerequisite: consent of instructor.

595-3 Research Paper. Research paper on a topic approved by a faculty advisor and committee in Mechanical Engineering. This course is restricted to graduate students in the non-thesis option. Prerequisite: consent of instructor or department and graduate standing in Mechanical Engineering.

599-1 to 6 Thesis. Six hours maximum course credit.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Microbiology

E-mail: microbiology@micro.siu.edu

COLLEGE OF SCIENCE

Achenbach, Laurie, Assistant Professor, Ph.D., University of Illinois, 1988; 1990. Molecular genetics and evolution of archaeobacteria.

Borgia, Peter, Associate Professor, Ph.D., (Springfield), University of Illinois, 1973; 1976. Genetics of fungal cell wall synthesis.

Brewer, Gregory J., Professor, Ph.D., (Springfield), University of California, San Diego, 1972; 1980. Alzheimers disease, neuron cell culture, synaptogenesis, ganglioside function.

Caster, John, Assistant Professor, Ph.D., St. Louis University, 1968; 1972.

Clark, David P., Professor, Ph.D., University of Bristol, 1977; 1980. Molecular biology and physiology of fermentation.

Cooper, Morris D., Professor, Ph.D., (Springfield), University of Georgia, 1971; 1973. Host parasite relationships, immune responses to infection.

Fix, Douglas F., Associate Professor, Ph.D., Indiana University, 1983; 1987. Molecular mechanisms of mutagenesis.

Gupta, Ramesh, Associate Professor, Ph.D., University of Illinois, 1981; 1984.

Haddock, John D., Assistant Professor, Ph.D., Virginia Tech, 1990; 1995. Bioremediation of organic chemicals using bacteria.

Jackson, Robert W., Professor, Ph.D., (Springfield), Purdue University, 1963; 1974.

Madigan, Michael T., Professor, Ph.D., University of Wisconsin, 1976; 1979. Bacterial diversity, nitrogen fixation.

Marcuzzi, Adriana B., Assistant Professor, Ph.D., (Springfield), University of Iowa, 1988; 1994. Molecular biology of the human immunodeficiency virus (HIV), which causes AIDS.

Maroun, Leonard, Professor, Ph.D., (Springfield), Catholic University of America, 1970; 1972. Alzheimers disease, Downs syndrome, molecular genetics and blood group genes.

Martinko, John M., Associate Professor and Chair, Ph.D., SUNY (Buffalo), 1978; 1981. Evolution of histocompatibility.

Moticka, Edward, Professor, Ph.D., (Springfield), University of Illinois, 1970; 1978. Occular immunology.

Myers, Walter L., Professor, Ph.D., (Springfield), University of Wisconsin, 1962; 1973. Inhibition of oncogenes.

Parker, Jack, Professor and Dean, College of Science, Ph.D., Purdue University, 1973; 1977. Molecular genetics, protein synthesis.

Rouhandeh, Hassan, Professor, *Emeritus*, Ph.D., Kansas State University, 1959; 1967.

Rowan, Dighton F., Professor, *Emeritus*, Ph.D., Stanford University, 1954; 1973.

Shechmeister, Isaac L., Professor, *Emeritus*, Ph.D., University of California, Berkeley, 1949; 1957.

Tewari, Ram P., Professor, Ph.D., (Springfield), Ohio State University, 1954; 1973. Immune responses in respiratory infection.

Watabe, Kounosuke, Associate Professor, Ph.D., (Springfield) Kyoto University, Japan, 1981; 1985. Molecular oncology.

The Department of Microbiology offers graduate work leading to the Master of Arts and Doctor of Philosophy degrees in microbiology. The programs are designed to provide advanced training in bacteriology, genetics, immunology, microbial physiology, molecular biology, and virology. Both programs involve in-depth research.

Admission, Advisement, and General Requirements

Prospective graduate students must submit 2 separate application forms, 1 for the Graduate School and the other for the Department of Microbiology. Graduate Record Examination (GRE) scores and 3 letters of recommendation are required as part of the departmental application.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Prerequisites for graduate training in microbiology include the equivalent of an undergraduate major in one of the biological sciences plus one year each of organic chemistry, physics, and suitable university level mathematics. Deficiencies in these requirements must be made up early in graduate training. In addition, students without a microbiology background will be required to take Microbiology 301 and obtain a grade of at least *B*, or pass an equivalent proficiency examination with a grade of 80% or better during the first week of the entering semester.

Admission to the master's degree program requires a minimum grade point average (GPA) of 2.70 (*A* = 4.00) on all undergraduate work. Selected students can be admitted directly to the doctoral program through the Ph.D. accelerated entry option. For all other students admission to the doctoral program requires a master's degree or its equivalent and a minimum GPA of 3.25 in all graduate course work. All admissions are subject to final approval by the department.

The departmental graduate adviser will assist each student with the initial planning of a program of study, including required courses, anticipated dates for fulfillment of specified requirements, etc. The adviser will also organize and supervise MICR 501, Preprofessional Training, a one hour course required of all incoming microbiology graduate students. Similarly the adviser will also assist the student in arranging for a graduate faculty advisory committee and its chair to assume the continuing responsibility of planning the program of study and directing the research project for the degree.

Direct Entry into Ph.D. Degree Program

Students with a baccalaureate degree may be admitted directly into the doctoral degree program. Students admitted under this direct entry option will be expected to meet all the normal requirements of the doctoral degree, take any additional course work that may be required by their research committee, and are required to take a general examination during their first two years in the program, equivalent to the comprehensive examination for the master's degree in microbiology.

Ph.D. Accelerated Entry Option

The Department of Microbiology offers the Ph.D. accelerated entry option to graduate students who have made an early commitment to a doctoral degree and meet certain criteria. At the end of two semesters of studies at the master's level, the graduate student's advisory and research (thesis) committee will review the student's credentials in order to establish eligibility to enter this program. The student's committee then has the option to recommend continuation in the master's program, or to approve application to enter the doctoral program.

The student's advisory and research (thesis) committee must establish that the student is prepared and able to conduct research at the doctoral level. This can be established by criteria such as seminars or other presentation of a research proposal. Further the student must have a GPA of 3.50 in all graduate course work, exclusive of research, special topics, etc., and letters of reference attesting to the student's outstanding ability and potential to perform doctoral research.

Upon approval of the student's eligibility by the department, the chair will prepare a written review of the student's qualifications for entry into this option. This must be submitted to the Graduate School for waiver of a master's degree or master's equivalency before entry into the doctoral program.

A student admitted to the doctoral program under this option is subject to all retention and exit requirements for the Ph.D. program including residency, examinations, GPA, dissertations, and all applicable time limits.

Master's Degree

Each candidate for the master's degree is required to complete 30 semester hours of acceptable graduate credit, in addition to MICR 501 including a minimum of 8 hours of thesis and research credit. The student is required to pass a comprehensive examination in microbiology and the thesis topic, and must present an approved thesis based on a laboratory research problem. Most students require two years to complete the work for a master's degree.

At least 15 of the 30 semester hours must be in microbiology courses numbered 500 or above. Within the 15 semester hours of 500 level credit, each student must successfully complete 8 semester hours of credit selected from departmental courses numbered 504, 520, 530, 542, 543, 551, 552, 553, and 562, taken once. The remaining semester hour requirements may be elected from the 400- and 500-level courses in the department or other departments with the approval of the graduate adviser. All students are required to enroll in MICR 500 (seminar) for credit in each semester they are registered up to a maximum of four semesters.

Copies of the draft thesis must be submitted to the advisory committee and the department chair at least 6 weeks before commencement. The approved thesis, in final form, must be submitted to the dean of the Graduate School at least 3 weeks before commencement.

The department does grant the master's equivalency on the basis of a comprehensive final examination administered by the advisory committee and a research paper. The granting of the master's equivalency does not confer admission to the Ph.D. program. Students wishing to take the master's equivalency should consult with their research adviser, the graduate adviser, and the department chair.

Doctoral Degree

Each prospective candidate for the doctorate is required to complete a minimum of 24 semester hours of dissertation credit, satisfy the course requirements, pass the qualifying examination, write and defend an acceptable dissertation based on a laboratory research problem, and meet the Graduate School residency requirements after admission to the doctoral program and before admission to candidacy.

All students will be expected to take a one year sequence in biochemistry (CHEM 451a and b, or its equivalent). In addition, all students will be expected to demonstrate a mastery of the fundamentals of the several fields included in the discipline of microbiology. This requirement will be achieved by completing 3 of the following: 520, 542, 543, 551, 553, and 562 or 2 of these and a non-prerequisite 400-level lecture course. Course equivalency will be decided by the department graduate adviser, the faculty member in charge of the relevant course, and the department chair. The GPA attained in these courses must be at least 3.25.

During their first two years in the graduate program all students must enroll in MICR 500 (seminar) for credit every semester. Advanced students are expected to attend all seminars but need not enroll.

The student is eligible to take the preliminary examination after completing the course requirements. After passing the preliminary exam and meeting the Graduate School residency requirements, the student is advanced to candidacy for the doctorate. The preliminary exam shall be administered as follows.

An approved student advisory committee (5 members of the graduate faculty) will prepare and administer a written preliminary exam covering several phases

of microbiology, with particular emphasis in the area of concentration declared. This declaration will be done by means of a prospectus of a dissertation containing a proposal for the dissertation research, biographical information on the candidate, and a list of courses taken during the candidate's graduate program. The prospectus shall be in the hands of the committee members at least 14 days prior to the date of the examination. Upon satisfactory completion of the written exam the candidate will meet with the committee as a whole and discuss the prospectus in detail. At this time the committee may ask in depth questions about the research project or other phases of microbiology particularly relevant to the candidate's research. A written exam score of at least 80% is required before a student can proceed to the oral portion of the preliminary exam, and at least 4 of the 5 committee members must judge the oral performance acceptable for a student to pass the preliminary exam overall. In the event that either the written or oral preliminary exam is failed, a student may request only one re-examination.

The Ph.D. preliminary exam (both written and oral portions) must be completed within 30 months of the date of entrance into the Ph.D. degree program.

Students working towards the doctoral degree should consider the following steps applicable to the dissertation.

1. The student and the major professor of the advisory committee determine the general nature of the research problem.
2. After formulation, the problem should be discussed with the advisory committee before extensive work is done. A discussion of the problem may be presented in a departmental seminar.
3. Periodic meetings of the student with the advisory committee are encouraged.
4. Copies of the draft dissertation should be available to the advisory committee at least 2 months prior to the deadline established by the Graduate School. The dissertation must be defended by the student in a public oral examination. The approved completed dissertation is transmitted to the dean of the Graduate School.

Courses (MICR)

403-3 Medical Microbiology Lecture. A survey of the more common bacterial, mycotic and viral infections of humans with particular emphasis on the distinctive properties, pathogenic mechanisms, epidemiology, immunology, diagnosis and control of disease-causing microorganisms. Three hours lecture. Spring semester. Prerequisite: 301.

405-3 Clinical Microbiology. (This course will be offered in Springfield only). A comprehensive course for health science professionals covering the biology, virulence mechanisms and identification of infectious agents important in human disease and host-defense mechanisms. Clinical applications are emphasized. Three hours lecture. Prerequisite: 301 or equivalent.

421-3 Biotechnology. Topics covered will include the genetic basis of the revolution in biotechnology, medical applications including genetic screening and therapeutic agents, industrial biotechnology and fermentation, and agricultural applications. Three hours lecture. Prerequisite: 302.

425-3 Biochemistry and Physiology of Microorganisms Lecture. Chemical composition, cellular structure and metabolism of microorganisms. Prerequisite: Organic Chemistry.

441-3 Virology Lecture. General properties; classification and multiplication of bacterial and

animal viruses; lysogeny; immunological and serological reactions; relation of viruses to cancer; consideration of selected viral diseases of animals. Prerequisite: 301 and 302.

444-2 Risk Assessment for Genetics and Medicine. A lecture-discussion course on the use of Bayesian probability to assess risks in human genetics and medicine. Includes basic laws of probability, pedigree analysis, the interpretation of laboratory tests and basic clinical decision theory, including decision trees. Active problem solving will be emphasized. Prerequisite: Biology 305.

451-6 (3,3) Biochemistry. (Same as Chemistry 451) (a) Chemistry and function of amino acids, proteins and enzymes; enzyme kinetics; chemistry, function and metabolism of carbohydrates; citric acid cycle; electron transport and oxidative phosphorylation. (b) Chemistry, function and metabolism of lipids; nitrogen metabolism; nucleic acid and protein biosynthesis; metabolic regulation. Three lectures per week. Must be taken in a,b sequence. Prerequisite: one year of organic chemistry.

453-3 Immunology Lecture. Principles of molecular and cellular immunology. Particular emphasis is given to molecular mechanisms involved in activation and maintenance of the immune response at the basic science level. The role

of the immune system in medical diagnostic procedures and in human health is also discussed. Spring semester. Prerequisite: 403 or permission of instructor.

454-4 Soil Microbiology. (Same as Plant & Soil Science 454). A study of microbial numbers, characteristics and biochemical activities of soil microorganisms with emphasis on transformation of organic matter, minerals and nitrogen in soil. Lab fee \$15. Prerequisite: 301 or Plant & Soil Science 240.

455-2 Medical Immunology. (This course will be offered in Springfield only). A survey of the components of the immune system and how they interact with each other to produce responses that are important in the control or mediation of human disease. Two hours lecture. Prerequisite: 301 or equivalent.

460-3 Genetics of Bacteria and Viruses. Genetic mechanisms, mutation, transformation, recombination, transduction, lysogeny, phenotypic mixing and reactivation phenomena. Three hours lecture. Prerequisite: 301 and 302.

470-3 Prokaryotic Diversity Lecture. A consideration of the major groups of prokaryotes with special emphasis on their comparative physiology and biochemistry. Three hours lecture. Spring semester. Prerequisite: 301 or equivalent.

480-4 Molecular Biology of Microorganisms Laboratory. Genetic and biochemical analyses of microorganisms using a variety of techniques in molecular biology, molecular genetics and biotechnology. Six hours laboratory per week plus two hours of supervised unstructured laboratory work in most weeks. Prerequisite: 302 and one (or concurrent enrollment) in one of the following: 421, 425 or 460.

481-4 Diagnostic and Applied Microbiology Laboratory. Enrichment and isolation of medically relevant prokaryotes from natural samples, diagnostic methods for the identification of pathogenic bacteria, and infection and the nature of the immune response. Six hours laboratory per week plus two hours unstructured, supervised laboratory work in most weeks. Prerequisite: 301 and 302 and two (or concurrent enrollment) in two of the following: 403, 453, 470.

500-1 Seminar. Microbiology departmental seminar. Graded *S/U* only. Prerequisite: graduate standing.

501-1 Pre-Professional Training. A one hour course designed to formally introduce students coming into the microbiology program to the research, teaching and support facilities available in Carbondale and at Springfield. Prerequisite is acceptance into the microbiology graduate program. This course will be required in addition to all Graduate School course and hour requirement. Graded *S/U* only.

504-3 Methods of Microbiological Research. Problem definition, experimental design and research methods in specific areas of microbiology. Lecture and laboratory hours to be arranged.

505-1 Special Topics in Microbiology. Discussion of current research in specific areas of microbiology. One hour of group discussion per week. Prerequisite: consent of instructor.

511-1 to 66 (1 to 12 per semester) Research. Graded *S/U* only. Prerequisite: consent of instructor.

515-1 to 6 (1 to 6 per semester) Master's Degree Research. Individualized laboratory research and training for graduate students beginning their research career at the Master's level. Graded credit. Prerequisite: admission to the master's degree program in Microbiology and consent of instructor.

520-2 Advanced Microbial Physiology and Control Mechanisms. The physiology, biochemistry, and genetics of microbial regulatory mechanisms. Topics include transport phenomena, catabolite and nitrogen repression, the stringent response, and autoregulatory phenomena. Two lectures per week. Prerequisite: 425a and b, or CHEM 451a and b, or permission.

528-1 to 3 Readings in Microbiology. Supervised readings for qualified graduate students. Prerequisite: consent of instructor.

530-3 Advanced Cellular Biology. An advanced course based on current literature concerning the cellular biology of eukaryotes. Both students and faculty will make presentations followed by discussion. Topics will include: the cellular and subcellular structure and function of the lower eukaryotes, the biochemistry and biophysics of eukaryotic membrane systems and the higher subcellular functions of mammalian cells. Prerequisite: 400 level course in genetics and in biochemistry or consent of instructor.

542-3 Molecular Virology. Interactions at the molecular level between tumorigenic and nontumorigenic DNA and RNA viruses and host cells, biochemical analysis of the growth cycle, uncoating, synthesis of virus-specified messenger RNA, enzymes and structural proteins, replication of viral nucleic acid and maturation. Three hours lecture. Prerequisite: 441.

543-3 Host-Microbial Interactions. A lecture course that deals in depth with mechanisms of symbiosis and other interactions with respect to the biochemistry of microbe and host. Immunological aspects are discussed. Emphasis is placed on molecular mechanisms. Offered alternated years. Prerequisite: 403 or consent of instructor.

551-3 Advanced Immunology. A lecture course that intensively considers the most recent developments in antibody structure, antigenic analysis, and antigen-antibody reactions. A special focus will be on the use of immunology as a research tool. Prerequisite: 451 and 452, or equivalent, or consent of instructor.

552-3 Cellular Immunology. A lecture-discussion course covering contemporary aspects of cellular immunology. The cellular nature of immune responses as well as current information on the regulation of such responses will be considered. Topics will include cellular components of an immune response; receptors, recognition and signals; cellular cooperation; immuno regulation; and tolerance and autoreactivity. Prerequisite: 451 and 452, or equivalent or consent of instructor.

553-3 Advanced Medical Microbiology and Immunology. A lecture course providing an in-depth analysis of the mechanisms of pathogenesis of bacterial, viral and mycotic infections. Immune mechanisms involved in recovery, development of immunity and infection mediated immunopathology will be covered. Prerequisite: 403 and 451, their equivalent or consent of the instructor.

562-3 Molecular Genetics. A lecture and discussion course emphasizing current research and new techniques in replication, transcription, translation, genome organization, gene flow from a general systems viewpoint and regulation. Prerequisite: 400-level course in genetics and in biochemistry or consent of instructor.

599-1 to 3 Thesis. Prerequisite: consent of instructor.

600-1 to 36 (1 to 12 per semester) Dissertation. Prerequisite: consent of instructor.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Mining Engineering

E-mail: ga3733@siucvmb.siu.edu

COLLEGE OF ENGINEERING

Chugh, Yoginder P., Professor and *Chair*, Ph.D., Pennsylvania State University, 1971; 1977. Rock mechanics and strata control, production engineering in coal mines, mine subsidence.

Honaker, Ricky Q., Assistant Professor, Ph.D., Virginia Polytechnic Institute and State University, 1992; 1991. Coal and mineral processing, applied surface chemistry in mining applications, automation and control.

Paul, Bradley, Associate Professor, Ph.D., University of Utah, 1989; 1990. Underground mining

systems and solution mining, minerals processing, hard rock and industrial minerals, geostatistics.

Sevim, Hasan, Professor, D.E.S., Columbia University, 1984; 1984. Mineral economics and operations research, materials handling, experimental design.

Sinha, Atmesh K., Professor, Ph.D., University of Sheffield, England, 1963; 1975. Coal processing, mine electrical engineering, mine health and safety.

Master of Science in Mining Engineering

Graduate work leading to the Master of Science degree in mining engineering is offered by the College of Engineering. The program is designed to provide advanced study in areas such as rock mechanics and ground control, finite element analysis of mining structures, experimental rock mechanics, mine subsidence, coal processing, computer simulation of coal processing plants, surface and underground mining systems performance optimization, evaluation of innovative mining systems, mineral economics and operations research, surface mine reclamation, in-situ mining, and waste disposal.

Admission

Students seeking admission to the graduate program in mining engineering must meet the admission standards set by the Graduate School and have a bachelor's degree in engineering or its equivalent. A student whose undergraduate training is deficient may be required to take coursework without graduate credit.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Requirements

A graduate student in mining engineering is required to develop a program of study with a graduate adviser and a graduate committee. Each student majoring in mining engineering may, with the approval of the graduate committee, also take courses in other branches of engineering or in areas of science and business, such as physics, geology, chemistry, mathematics, life science, administrative sciences, or computer science.

For a student who wishes to complete the requirements of the master's degree with a thesis, a minimum of thirty semester hours of acceptable graduate credit is required. Of this total, eighteen semester hours must be earned in the mining engineering department. Each candidate is also required to pass a comprehen-

sive oral examination covering all of the student's graduate work including thesis.

If a student prefers the non-thesis option, a minimum of 36 semester hours of acceptable graduate credit is required. The student is expected to take at least 21 semester hours within mining engineering including no more than 3 semester hours of the appropriate 592 course to be devoted to the preparation of a research paper. In addition, each candidate is required to pass a written comprehensive examination and an oral examination on the research paper.

Each student will select a minimum of three engineering graduate faculty members to serve as a graduate committee, subject to the approval of the chair of the mining engineering department. The committee must consist of at least one member from one of the other engineering departments and will:

1. approve the student's program of study,
2. approve the student's research topic,
3. approve the completed research paper or thesis, and
4. administer and approve the written comprehensive or oral examination.

Teaching or research assistantships and fellowships are available for qualified applicants. Additional information about the program, courses, assistantships, and fellowships may be obtained from the College of Engineering or the Department of Mining Engineering.

Courses (MNGE)

400-3 Principles of Mining Engineering. Basic principles of mineral exploration, development and processing. Environmental problems related to mineral development. Prerequisite: junior standing in engineering.

401-1 Mining Environmental Impacts and Permits. Socio-economic impacts of mining industry. Analyzing the markets for coal and its products. Mining operations and related environmental impacts. Mining permits. Prerequisite: 400 or consent of instructor.

410-3 Underground Mining Systems Design. Study of coal property evaluation. Underground mining methods. Design of mine production and its ancillary systems and subsystems. Prerequisite: 400, Civil Engineering 263 or 320, Mathematics 251, Engineering 361, Geology 390 or concurrent enrollment. Consent of instructor for graduate students and non-majors.

411-2 Mine Machinery. Analysis and design of underground and surface mining machinery. Equipment and parts selection. System development. Preventive maintenance. Prerequisite: 410.

413-3 Mine and Industrial Power Systems. Electric circuits, transformers, motors and their industrial applications. Electrical power distribution; systems design and components selections. Pneumatic and hydraulic power principles. Prerequisite: Physics 205 and Mathematics 250.

415-4 Surface Mining, Quarrying and the Environment. Surface mining and quarrying methods for coal, aggregate and hardrock minerals. Surface mining and quarrying economics. Product specifications and transportation. Equipment sizing and selection. Drainage control. Blasting design for control of fragmentation, air blast and vibration. Prerequisite: 400, Civil Engineering 263 or Mining Engineering 320, Mathematics 251, Engineering 361. Consent of instructor for graduate students and non-majors.

417-3 Applied Probability and Statistics for Engineers. Probability and statistics concepts,

analysis of engineering experimental data. Fitting experimental data to distribution functions. Regression analysis. Quality control in production systems. Reliability in engineering processes. Stochastic simulation of engineering systems. Prerequisite: Mathematics 251 or consent of instructor.

418-3 Mining of Ore Deposits. Analysis, planning and design of surface hardrock mines and underground mining system. Analysis of mining and equipment costs. Prerequisite: 400, Civil Engineering 263 or Mining Engineering 320, Geology 390.

420-3 Mineral and Coal Processing. Principles of processing minerals, aggregates and coal, including unit operations of comminution, classification, solid-solid separation, dewatering and tailings disposal. Laboratory investigations of the fundamental principles governing unit operations including size reduction, mineral liberation, classification mineral recovery and dewatering. Laboratory. Prerequisite: 400, Chemistry 210, Physics 205b, Mathematics 305, Engineering 313 or concurrent enrollment. Consent of instructor for graduate students and non-majors.

421-3 Mineral Processing Plant Design. Engineering design of unit operations used for mineral, aggregate, coal processing, flowsheet design, simulation of processing plants, evaluation of plant performance and process control. Laboratory investigations on the design of unit operations including size reduction, classification, gravity separation, flotation and dewatering. Laboratory. Prerequisite: 417 or concurrent enrollment and 420. Consent of instructor for graduate students and non-majors.

425-3 Mine Ventilation Systems Analysis and Design. Study of the theories and practice of natural and forced mine ventilation. Fan and mine characteristics. Ventilation network analysis. Mine ventilation design and problem analysis. Laboratory. Prerequisite: 410, Engineering 300

and 313. Consent of instructor for graduate students and non-majors.

430-3 Economics of Mineral Resources. Economics of mineral resources. Investment decision making criteria; economic viability of mining projects, financing mining projects; sensitivity and risk analyses. Prerequisite: 400, Engineering 361, or consent of instructor.

431-3 Rock Mechanics: Principles and Design. Analysis of stress and strain, elementary elasticity, stress distribution around openings, engineering properties of rocks, artificial support and reinforcement, slope stability. Laboratory. Prerequisite: Engineering 311, Mathematics 305.

435-3 Operations Research and Computers in Mine Design. Mine systems analysis, operations research and statistics in decision making, production engineering, mine planning, optimization, linear programming, computer simulation. Prerequisite: either 410 and 415, or 418 alone, also Engineering 222 and 361.

440-3 Material Handling Systems. Analysis and design of material handling systems and subsystems. Material handling systems economics. Prerequisite: 410, 413, 415 and 417 or concurrent enrollment. Consent of instructor for graduate students and non-majors.

445-3 Mine Equipment Maintenance Engineering. Mechanical, hydraulic and electrical systems in mining equipment. Equipment maintenance problems in mines and minerals processing facilities. Cost of lost production. Cost centers and identification of high cost problem areas in mining operations. Principles, design and development of maintenance systems. Maintenance organization, responsibility, and scheduling. Prerequisite: 410, 415, 417, Engineering 385 or concurrent enrollment. Consent of instructor for graduate students and non-majors.

455-3 Mine Environment, Health and Safety. Analysis of mine environmental impacts and their mitigation, safety problems and rules and regulations, hazards and accidents sealing and recovery of mines, design of mine emergency plans, safety methods, and health hazard control plans. Acid mine drainage, minerals waste disposal, environmental remediation. Laboratory. Prerequisite: 410, 415, 417 or concurrent enrollment. Consent of instructor for graduate students and non-majors.

460-4 Computer Aided Mine Systems Analysis and Design. Projects in planning and design of surface and underground mining systems. Evaluate and design mining subsystems; integrate subsystems and procedures into a preliminary mine design; and optimize operations from exploration to closure. Ethics and professionalism in engineering. Two lectures and two two-hour laboratories per week. Prerequisite: 420, 425, 431 or consent of instructor.

470-3 Experimental Methods in Rock Mechanics. Supplement theoretical knowledge gained in 431 with laboratory experiments. Physical property tests for specific gravity, moisture, density porosity of rocks. Unconfined and confined compressive strength, tensile strength, shear strength, photoelasticity, static and dynamic strain measurement systems, field instrumentation techniques. Laboratory. Prerequisite: 431.

475-3 Analysis and Design of Mine Excavations. Rock classification; design of shafts, slopes, tunnels and underground chambers; support requirements; design of slopes; design of underground mining systems from ground control point of view; design of impoundments. Prerequisite: 410, 415 and 431. Consent of instructor for graduate students and non-majors.

480-3 Rock Fragmentation Systems. Principles of rock fragmentation. Drilling and mechanics of rock penetration, drillability indices. Chemistry of explosives. Design of blast patterns in surface and underground mines and quarries, prevention of air blast, vibration and noise. Prerequisite: 415. Consent of instructor for graduate students and non-majors.

511-3 Advanced Ground Control. Ground control in viscoelastic, plastic, and jointed rocks, artificial rock stabilization, in-situ stresses, minimizing structural damage due to subsidence, bumps and rock bursts. Prerequisite: 431 or consent of instructor.

519-2 Advanced Mine Environment and Pollution Control. Study of the design of coal dust control plan; methane control. Design of mine illumination system, noise control and water pollution control. Prerequisite: 410, 415.

530-3 Mine Management. Study of basic management principles, labor relations, and coal wage agreement. Costing methods and cost control. Operations organization and performance analysis. Prerequisite: consent of instructor.

535-3 Rock Fragmentation. Principles of rock fragmentation, cutting and drilling, mechanics of rock penetration, drillability indices, use of explosives in rock fragmentation, design of blasting patterns in surface and underground mines, prevention of airblast and noise due to blasting, chemical fragmentation. Prerequisite: 415, 431 or consent of instructor.

540-3 Production Engineering in Coal Mines. Operations analyses of production cycles in surface and underground coal mining systems, mine planning and design using computer models, computer simulation, economic analysis of mining systems. Prerequisite: 435 or consent of instructor.

545-3 Tunnelling. Tunnelling through consolidated and unconsolidated geologic materials—cut and cover, drilling and blasting, and rapid excavation tunnelling techniques. Classification systems for geologic materials, hydrological investigations, tunnel linings—types, requirements and their design. Instrumentation. Prerequisite: 431 or equivalent, or consent of instructor.

580-1 to 2 Seminar. Collective and/or individual studies in coal extraction or utilization.

592-1 to 5 Special Investigations. Special studies of coal extraction or utilization problems.

599-1 to 6 Thesis.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Music

E-mail: fstemp@siu.edu

COLLEGE OF LIBERAL ARTS

Allison, Robert, Associate Professor, D.M.A., University of Illinois, 1988; 1982. Trumpet, jazz.

Barta, Michael, Associate Professor, M.Mus., Liszt Academy Conservatory, 1975; 1985. Violin, music literature.

Barwick, Steven, Professor, *Emeritus*, Ph.D., Harvard University, 1949; 1955.

Bateman, Marianne Webb, Professor, M.Mus., University of Michigan, 1959; 1965. Organ, music theory.

Beattie, Donald, Associate Professor, M.Mus., University of Colorado, 1977; 1979. Class piano, piano pedagogy.

Best, Richard, Professor, Metropolitan Opera School, 1968; 1984. Voice.

Bottje, Will Gay, Professor, *Emeritus*, A.Mus.D., Eastman School of Music, 1955; 1957.

Breznikar, Joseph, Professor, M.Mus., University of Akron, 1977; 1980. Classical guitar.

Brown, Philip, Assistant Professor, M.M.E., University of North Texas, 1983; 1991. Jazz, string bass, music business.

Delphin, Wilfred, Professor, D.M.A., University of Southern Mississippi, 1978; 1988. Piano.

Fligel, Charles, Associate Professor, M.Mus., University of Kentucky, 1966; 1976. Bassoon, music theory.

Grizzell, Mary Jane, Assistant Professor, *Emerita*, M.Mus., Eastman School of Music, 1943; 1959.

Hanes, Michael D., Associate Professor, M.M.Ed., Southern Illinois University at Carbondale, 1965; 1970. Bands, musical theater, percussion.

House, Mary Elaine Wallace, Professor, *Emerita*, M. Mus., University of Illinois, 1954; 1969.

Hunt, C. B., Jr., Professor, *Emeritus*, Ph.D., University of California, Los Angeles, 1949; 1974.

Hussey, George, Professor, *Emeritus*, M.A.Ed., Washington University, 1963; 1963. Oboe, music appreciation, orchestra.

Mandat, Eric, Professor, D.M.A., Eastman School of Music, 1986; 1981. Clarinet, composition.

McHugh, Catherine, Professor, *Emerita*, Ed.D., Columbia University, 1959; 1969.

Mellado, Daniel, Associate Professor, Ph.D., Michigan State University, 1979; 1979. Cello.

Mochnick, John, Associate Professor, D.M.A., University of Cincinnati, 1978, 1984. Choral.

Mueller, Robert, Professor, *Emeritus*, Ph.D., Indiana University, 1964; 1948.

Olsson, Phillip, Professor, *Emeritus*, M.Mus., Chicago Conservatory, 1949; 1949.

Phillips, Dan, Associate Professor, M.M., University of Notre Dame, 1979; 1988. Bands, horn.

Poulos, Helen, Associate Professor and *Graduate Coordinator*, D.M., Indiana University, 1971; 1969. Musicology.

Resnick, Robert, Professor, *Emeritus*, M.Mus., Wichita State University, 1949; 1949.

Ritcher, Gary, Assistant Professor, Ed.D., University of Illinois, 1989; 1989. Music education.

Roubos, Robert, Professor, D.M.A., University of Michigan, 1965; 1981.

Simmons, Margaret, Associate Professor, M.Mus., University of Illinois, 1976; 1977. Piano accompanying.

Stemper, Frank, Professor, Ph.D., University of California, 1981; 1983. Composition.

Taylor, Charles, Associate Professor, *Emeritus*, Ed.D., Columbia University, 1950; 1957.

Underwood, Jervis, Professor, Ph.D., North Texas State University, 1970; 1971. Flute, musicology, theory.

Wagner, Jeanine, Associate Professor, D.M.A., University of Illinois, 1987; 1984. Voice, opera.

Weiss, Robert, Professor and *Director*, Ph.D., Southern Illinois University at Carbondale, 1984; 1978. Music education, low bass.

Werner, Kent, Associate Professor, *Emeritus*, Ph.D., University of Iowa, 1966; 1963.

The School of Music faculty numbers twenty-seven full-time positions. Within its ranks are to be found many outstanding performers and educators, representing a broad diversification of background and talent. Faculty members present many solo and small ensemble performances, as well as clinics and workshops, during the school year. Sixteen members of the faculty hold doctorates or its equivalent.

Library Facilities

In addition to Morris Library, the School of Music has its own recording and score library, including modern stereo listening facilities, cassettes, and cassette decks for self-instruction in ear training and music literature, some 1600 LP recordings and tapes, over 1100 scores, many in multiple copies, and 94 books and reference works. The self-instruction center in Morris Library provides tape recordings of theory and literature for student use.

Musical Organizations

A wide variety of performing opportunities is available, including the University Symphony, symphonic band, wind ensemble, jazz ensemble, Marching Salukis, brass ensemble, guitar ensemble, percussion ensemble, choral union, concert choir, chamber choir, and vocal jazz ensemble. The Marjorie Lawrence Opera Workshop presents one full opera production each year in addition to several programs of small operas and operatic excerpts. The Summer Music Theater presents two full-scale musicals during the summer session.

Musical Performances

Some 130 School of Music programs are presented each year, plus Southern Illinois Concert Series and Celebrity Series appearances by well-known concert artists. A program booklet for further details concerning concert activity is available through the School of Music.

Other Resources

A fifty-eight rank Reuter pipe organ, the principal instrument for recitals and teaching, is installed in Shryock Auditorium. Available for practicing are a four-rank Ott tracker organ, a six-rank Moeller, and a four-rank Wicks. Eighty-five pianos, including twenty-two in practice rooms, an eighteen-unit electronic piano lab, and a full complement of band and orchestral instruments are available.

Graduate Assistantship and Fellowship Applications

Any student seeking a master's degree may apply to the coordinator of graduate studies in music for a graduate assistantship. An undergraduate overall grade-point average of 2.8 ($A = 4$ points) is required for consideration. The assignment of assistantships, for those who are eligible, is based upon School of Music needs and student qualifications. Graduate Assistants must enroll in courses for the required 6 hour minimum each semester of residency which count toward degree requirements. A student with an overall grade-point average of 3.5 or better is eligible to apply for a graduate fellowship involving no School of Music assignment. The School of Music offers six programs leading to the Master of Music degree. Each master's degree requires a minimum total of 30 credits, with a minimum total of 15 credits at the 500 level. Students enrolled in a program leading to a Ph.D. degree major in education, with a concentration in curriculum and instruction education, may choose the elective portion of their programs from graduate courses offered in the School of Music.

Master of Music Degree Standard Curricula

MUSIC HISTORY AND LITERATURE CONCENTRATION

Majors complete MUS 501-3; 502-4 (2,2); 2 credits (1,1) from 566; 6 credits selected from 475, 476, 477, 573, 574, or 578; 599-6; 6 credits in music history-literature electives; 3 elective credits in non-music history-literature courses. In addition to the general requirements for graduation, music history/literature majors must have successfully completed two years of a foreign language (preferably French or German), at the undergraduate level, or pass 388-488 (German or French) as a research tool with a grade of *B* or higher.

MUSIC THEORY AND COMPOSITION CONCENTRATION

Majors complete MUS 501-3; 502-4 (2,2); 545-3; 3 credits from the 470 or 570 series; 480-4 (580-4 must be completed by composition majors); 2 credits (1,1) selected from 566; 599-6; 5 credits of approved music electives in theory-composition, history-literature, conducting, or performance.

PERFORMANCE CONCENTRATION

Majors complete MUS 501-3; 502a or b (2); 5 credits from 461, 482, or 470 or 570 series; 8 credits in 540 (440 if specializing in pedagogy); 2 credits from 566, 567, or 568 (or other electives if keyboard major); 6 credits in 595 and 598 (recital and document); 4 credits in non-performing music elective. If specializing in conducting, majors must complete MUS 501-3; 502-4 (2,2); 556-4 (2,2); 3–6 credits from the 470 or 570 series; 2–4 credits in 440; 2 credits from 566 (1,1) or other electives if keyboard major; 6 credits in 595 and 598 (recital and document); 3 credits in music electives.

OPERA/MUSIC THEATER CONCENTRATION

Opera/music theater majors must have an undergraduate degree major in music with appropriate experience in opera or music theater, or in theater with additional music study sufficient to qualify in performance, theory, and history of music. Core courses (required) include MUS 468 (2–4); 501 (3); 570 (3); 595 (2); 598 (4) or 599 (6) in lieu of 598 and 595. Also required are MUS 567 or 568 (1,1,1,1); 6 credits from 440–540, 461, 472, 479c or 556; and 6 hours of *approved* graduate level theater credits.

PIANO PEDAGOGY CONCENTRATION

Majors complete hours of credit in the following music courses: 3 in 501; 4 in 440 or 540; 4 in 498 and 2 in 595 or 4 (2,2) in 498 and 2 in 595 or 2 in 498 and 4 in 599; 410; 510 (2,2,2); 2 (1,1) from 566; 3 credits from approved music electives; and 4 credits from approved non-music courses (in fields of guidance and educational psychology, higher education, philosophy, and speech communication).

MUSIC EDUCATION CONCENTRATION

Majors complete MUS 501-3; 502a or b (2); 503 and 509; 5 hours of approved music education courses and 2 credits of approved music electives; 2 credits (1,1) from 566; 5 credits from the 470 and 570 series; 599-6 or 6 credits from 499 and 595; or 595 and 598.

General Information

Fees. Fees are not charged for individual instruction, practice rooms, or instrument lockers. Instruments are loaned without charge when needed. Student expenses for music, textbooks, and other incidental supplies are usually nominal.

Advisement. The graduate coordinator in music supervises the overall planning of the student's program and designates the document or thesis director.

Diagnostic tests in music theory and history are given during orientation at the beginning of the fall semester and must be taken by all students at the first opportunity after admission. The student with weaknesses in certain areas may be asked to take additional work in those areas. A student will be accepted as a performance major in the Master of Music degree program after satisfactory audition in person, either before admission or during orientation. A performance major may be conditionally accepted on the basis of a tape recording; but a student accepted conditionally may be asked to audition in person during orientation or during the first term of residence, and may be required to register at the 400 level in performance until approved by personal audition. Current brochures from various performance areas and the *Graduate Handbook in Music* describe the level of repertory expected, audition procedures, and diagnostic tests.

NOTE: The B.A. degree does not provide the necessary prerequisites for graduate study in a Master of Music degree program.

Ensemble Requirement. All graduate students are required to register for MUS 566 (MUS 567 or 568 may substitute for MUS 566 only for those students whose concentration is opera music theater) each semester of degree study (summers excepted). Participation is required each semester in one or more of the following: Marching Salukis, symphonic band, wind ensemble, symphony, choral union, concert choir, chamber singers, or guitar ensemble. In addition, students may elect participation in other regularly scheduled emphasis. Graduate assistants assigned ensemble accompanying must register for alternate ensemble for credit. Petitions for exceptions to the ensemble requirement must be made in writing and presented to the School of Music graduate committee for consideration.

Exceptions to Degree Requirements. Appropriate substitutions in the curriculum for the Master of Music degree may be made if recommended by the student's adviser and approved by the graduate committee in music. Students who expect to earn more than half of their credits during summer terms only, or by a combination of summer attendance and night classes, may similarly propose a sequence of course offerings, following the above curricular patterns as far as possible. All curricula must meet Graduate School requirements and be approved by the graduate committee in music. Special summer students changing plans and registering for more than one regular fall or spring semester will ordinarily follow the appropriate standard curriculum.

The Thesis, Document, and Research Paper. All master's degree candidates will complete either (1) a thesis, or (2) a large, original composition and document, or (3) a full recital performance and document.

No later than the beginning of the semester preceding the semester in which the student expects to graduate, the graduate coordinator, in consultation with the student, will designate a document or thesis director from the current list of graduate faculty from whom a student has taken graduate level courses. The document or thesis director guides the student's choice of topic and is responsible for the progress and quality of the resulting work. The document director normally heads the student's orals committee. Before any work is begun on the thesis or document, the student submits a proposal, together with a selective bibliography where applicable and the reactions of the document or thesis director, to the coordinator of graduate studies in music for approval by the graduate committee. Changes of topic or of document director after initial approval must be approved by the music graduate committee.

Graduate Recital (598-4) is supervised by a jury of at least 3 members, headed by the student's instructor in performance. This jury approves the level of literature to be performed and acceptability of the performance by means of an audition in advance of the final performance.

Comprehensive Examinations. During the final semester of study, and after completion of the document or thesis, the student will take comprehensive examinations dealing with general areas of music and concentrations of music study, and, when appropriate, with the student's thesis or document. Application to take comprehensive examinations must be made at the beginning of the student's last semester of study. The examinations must be passed in time to meet Graduate School deadlines. Application for comprehensive examinations may not be made until all other requirements, with the exception of terminal-semester courses, for the degree have been satisfied. A failed section of the comprehensive examinations may be taken again in a following term.

The oral examination committee, appointed by the coordinator of graduate studies in music, is headed by the student's document or thesis director with two or more faculty members with whom the student has had graduate level classes,

as requested by the student. If the student has scheduled 6 or more hours in a department other than music, a member of this department will be invited to serve on the examining committee. The examination committee will conduct the student's oral examination and will supply questions for the student's written examination.

Three copies of all theses, thesis-composition manuscripts, and tapes and documents must be submitted in final form to the music graduate office at least 5 weeks before the intended date of graduation, carrying the approval of all members of the student's graduation committee. The graduate coordinator will forward 1 copy of a student's document (2, if a thesis) to the Graduate School and retain 1 copy.

Courses (MUS)

Courses in this department may require the purchase of music literature and other incidental supplies.

400-1 to 2 (1,1) Performance Techniques. Individual instruction in any secondary applied field. Designed to provide added depth of preparation for teaching instrumental and vocal music. Prerequisite: completion of 340 level or the equivalent in some field of applied music.

407-2 Modal Counterpoint. Study of Renaissance contrapuntal techniques. Extensive writing practice, and analysis of stylistic models. Prerequisite: 207.

410-2 Piano Pedagogy Practicum. Provides undergraduate and graduate piano pedagogy majors with the opportunity for supervised practice piano teaching. Course activities include lesson-planning, conducting and evaluating studio piano and class piano lessons, and a survey of important educational issues that impact on effective piano teaching. Prerequisite: consent of instructor.

414-1 to 8 (1 to 2 per semester) Collegium Musicum. For experienced singers and instrumentalists. Emphasis upon practical study of historical music literature of the Medieval, Renaissance and Baroque eras.

421-2 Advanced Analysis. Structure, form, and design in music as the coherent organization of all of its factors. Analysis of works chosen from a variety of styles and genres. Prerequisite: 321.

430-1 Jazz Arranging. Methods of scoring for popular groups. Practice in scoring arrangements and/or original compositions for jazz ensembles. Prerequisite: 335a and b or consent of instructor.

440-1, 2, or 4 Applied Music. (See Music 040.)

447-4 (2,2) Electronic Music. (a) Introduction to classical studio equipment and techniques; use of voltage controlled equipment. Individual laboratory experience available. (b) Emphasis upon creative projects, more sophisticated sound experimentation, and analysis. Enrollment limited. Must be taken in a,b sequence. Prerequisite: 280 or consent of instructor.

453-2 to 4 (2 per semester) Advanced Topics in Choral Music. Practicum in the selection, rehearsal, and performance of appropriate literature. Study of techniques for achieving proficient performance and musical growth. For experienced teachers and advanced students.

454-2 to 4 (2 per semester) Advanced Topics in Instrumental Music. Practicum in the selection, rehearsal, and performance of appropriate

literature. Study of techniques for achieving proficient performance and musical growth. Designed for experienced teachers and advanced students.

455-2 to 4 (2 per semester) Advanced Topics in Elementary School Music. Practicum in the selection and use of materials for the elementary school program. Study of techniques for achieving balanced musical growth. For experienced teachers and advanced students.

456-4 (2,2) Music for Exceptional Children. (a) Theories and techniques for therapeutic and recreational use of music with physically and mentally handicapped children. Includes keyboard, autoharp, guitar and tuned and untuned classroom instruments. (b) Applications for the gifted, emotionally disturbed, and culturally disadvantaged child. Take in sequence. Prerequisite: 302 or prior consent of instructor.

461-3 Applied Music Pedagogy. Specialized problems and techniques employed in studio teaching of any particular field of music performance. Study of music literature appropriate for the various levels of performance. Opportunity, as feasible, for supervised instruction of pupils. Meets with appropriate instructor, individually or in groups.

468-2 to 4 (2,2) Music Productions. Practicum in the techniques for staging operas and musicals.

472-2 Chamber Music Literature. A study of literature for the principal types of chamber music groups.

475-3 Baroque Music. The development of vocal and instrumental music in the period 1600-1750, from Monteverdi to Bach and Handel. Oratorio and Cantata, the influence of opera, sonata, suite and concerto. Prerequisite: 357a with a grade of C or better, or graduate standing.

476-3 Classical Music. Development of the sonata, symphony, concerto, and chamber music in the 18th and early 19th centuries, with emphasis on the music of Haydn, Mozart and Beethoven. Prerequisite: 357b with a grade of C or better, or graduate standing.

477-3 Romantic Music. Development of the symphony and sonata forms, chamber music, and vocal music in the 19th and early 20th centuries. Rise of nationalism and impressionism. Prerequisite: 357b with a grade of C or better, or graduate standing.

479-2 to 4 (2 per topic) Solo Performance Literature. Topics presented will depend upon the needs of students and upon instructors scheduled. (a) Piano literature, including an introductory study of harpsichord music; (b) Organ literature, in relation to the history of the instrument; (c) Song literature; (d) Guitar and lute literature; (e) Solo string literature; (f) Solo wind literature.

480-2 to 4 (2,2) Advanced Composition. Original composition involving the larger media. Individual instruction. Prerequisite: two semesters of 380 with a grade of C or better and approval of composition jury.

481-1 to 4 Readings in Music Theory. Assigned readings and reporting of materials pertaining to a particular phase of music theory in historical perspective. Approximately three hours' preparation per week per credit (adjusted for shorter sessions). Prerequisite: 321 and 322 or prior consent of instructor.

482-1 to 4 Readings in Music History and Literature. Assigned readings and reporting of materials pertaining to a particular phase of history or literature. Approximately three hours preparation per week per credit. Prerequisite: 357a and b, or prior consent of instructor.

483-1 to 4 Readings in Music Education. Assigned readings and reporting of materials pertaining to a particular phase of music education. Approximately three hours preparation per week per credit (adjusted for shorter sessions). Prerequisite: consent of instructor.

498-2 to 4 (2,2) Recital. Preparation and presentation of a full solo recital in any applied field. Prerequisite: prior or concurrent registration in 440 and approval of applied jury.

499-1 to 8 Independent Study. Original investigation of selected problems in music and music education with faculty guidance. Project planned to occupy approximately three hours preparation per week per credit (adjusted for shorter sessions). Not more than three hours toward 30 required for graduate degree. Prerequisite: prior consent of selected instructor.

500-1 to 6 Independent Investigation. An opportunity for the graduate student to investigate at an advanced level special interests outside the scope of normal course offerings. The student will select a member of the graduate faculty to guide and evaluate the work. Not more than three hours toward 30 required for graduate degree. Prerequisite: prior consent of the selected instructor and student's graduate adviser.

501-3 Music Bibliography and Research. Bibliographic materials for graduate study in music theory, history, education, and music performance. Practical experience in research techniques and scholarly writing style. Recommended to be taken during the first semester of graduate study. Required of all degree programs.

502-4 (2,2) Analytic Techniques. Analysis of representative works chosen from the Baroque, Classical, Romantic, and Modern eras. Prerequisite: graduate standing in music or prior consent of instructor.

503-3 Scientific Evaluation and Research in Music. Quantified research concepts and vocabulary; measurement theory and techniques for evaluating and testing musical aptitude and achievement; investigation of acoustical percep-

tion; survey of current scientific research in music. A research project is required.

509-2 History and Philosophy of Music Education. The evolution of school music and its changing relationship to the individual, to society and to the school curriculum.

510-6 (2,2,2) Piano Pedagogy Seminars. (a) Piano Technique. Provides an in-depth study of the three classic texts on the subject of piano technique and prepares students to deal with important aspects of piano technique in piano teaching. (b) Piano Literature. An extensive survey of baroque, classical, romantic and contemporary piano literature designed specifically to meet the needs of those pursuing professional careers as piano teachers. (c) Piano Music Analysis. Details the analytic and problem-solving techniques of piano performance study that are fundamental for teaching piano students of all ages and abilities.

535-2 Contemporary Idioms. An analysis of major compositional techniques since 1945. Prerequisite: 502b or consent of instructor.

540-1, 2, or 4 Applied Music. (See Music 440.)

545-3 Pedagogy of Music Theory. An orientation to the philosophy of theory with application to teaching techniques. Prerequisite: consent of instructor.

550-2 School Music Administration and Supervision. Study of the objectives and processes of music instruction. Administration roles in developing the means and ends of music instruction, and techniques employed for the improvement of instruction.

556-2 to 4 (2,2) Advanced Conducting. Individual or group study with appropriate instructor of choral, orchestral, or band literature. Practice in score reading, baton technique and interpretation. Opportunity to rehearse and conduct ensembles when feasible. Prerequisite: completion of an undergraduate conducting course with graduate standing in music, or consent of instructor.

566-1 to 12 (1 or 2 per semester) Ensemble. Participation required each semester enrolled (summer excepted) in one or more of the ensembles listed below. In addition, students may elect participation in other regularly scheduled ensembles. One credit per group; maximum of two credits for concurrent participation in two groups. (a) Marching Salukis. (b) Symphonic band. (c) Concert wind ensemble. (d) Symphony. (e) Choral union. (f) Concert choir. (g) Chamber singers. (h) Guitar ensemble. (i) Opera workshop.

567-1 to 8 Music Theater Workshop. For experienced singers, actors, dancers and instrumentalists. Normally offered during summer as a full time course for eight credits, or partial credit for the orchestral players. Prerequisite: audition.

568-1 to 16 (1 to 8 per semester) Opera Workshop. Open to all experienced singers and stage technicians. Performs one major work and two or more excerpt programs per year. Normal registration is for two credits; four credits with permission for those with major roles; eight credits for full time summer workshop.

570-3 History of Opera. The development of the music, libretti, and staging of opera from the late Renaissance to the present, with a detailed study of selected works. Prerequisite: for non-music majors: prior consent of instructor.

573-3 Medieval Music. Music of the medieval world; Gregorian chant; the Tropes; secular songs of the troubadours and trouveres; the rise of polyphony; *Ars Antiqua*; organum and conductus; *Ars Nova*; Dunstable and English descant up to about 1450; types of notation. Prerequisite: for non-music majors: prior consent of instructor.

574-3 Renaissance Music. Burgundian and Netherlands music from 1450 and its spread; Isaac and Josquin; 16th Century polyphony in France, Germany, Spain, and England; the rise of music for instruments and for solo voices. Prerequisite: for non-music majors; prior consent of instructor.

578-3 Twentieth Century Music. The heritage of 20th century music. Study and analysis of musical philosophies and techniques of post-impressionist and contemporary composers. Prerequisite: for non-music majors: prior consent of instructor.

580-2 to 4 (2,2) Graduate Composition. Composition in the larger forms for solo and ensemble performance. Prerequisite: 480 or prior consent of instructor.

595-2 Music Document. A written report presenting the history and style of works performed in graduate recital, Music 598, or other topic relating to the student's principal performing area or independent study project. Prerequisite: 501 and approval of topic by the music graduate committee. On recommendation of the composition faculty and with graduate committee approval, a

piece of music composed by the student for performance in Music 598 may be substituted, accompanied by a written analysis.

598-4 Graduate Recital. Preparation and presentation of a full solo recital in any area of performance; or the preparation, rehearsal, and conducting of a full ensemble program or of the equivalent sections of several ensemble programs. Prerequisite: completion of at least four credits in 540 (or 556 for conductors) and the approval of the performance jury. The performance jury certifies the acceptability of the completed recital and the grade to the graduate committee.

599-2 to 6 Thesis. An intensive written study in the history, theory, teaching or philosophy of music; or the manuscript and parts (with tape recording when feasible) of a substantial musical composition or series of compositions accompanied by an analytical or explanatory document. Graded *S/U* or *DEF*. Prerequisite: 501 and prior approval of topic or proposal by thesis director and graduate committee in music.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Pharmacology

E-mail: dsmith@wpsmtp.siumed.edu

SCHOOL OF MEDICINE

Becker, Robert E., Professor, M.D., (Springfield), McGill University, Canada, 1960; 1983. Neurochemistry/neuropharmacology and biochemical pharmacology.

Caspary, Donald M., Professor, Ph.D., (Springfield), New York University, 1971; 1973. Sensory physiology, neurophysiology, neuroanatomy, comparative physiology.

Dunaway, George A., Professor, Ph.D., (Springfield), University of Oklahoma, 1970; 1975. Regulation of energy/metabolism during diabetes; development and aging; induction of experimental ulcers in rats.

Faingold, Carl L., Professor and *Chair*, Ph.D., (Springfield), Northwestern University, 1970; 1972. Convulsive seizure mechanisms and effects of anticonvulsants; pharmacological alterations of cerebral evoked potentials.

Helfert, Robert, Professor, Ph.D., (Springfield), University of California, 1987; 1990. Cytoarchitecture, connections and transmitter specificity of the central auditory system; age-related changes in the cytoarchitecture and synaptic organization of the auditory and vestibular systems.

Lai, Chen-Ching, Assistant Professor, Ph.D., (Springfield), University of Wisconsin School of Medicine, 1988; 1991. Molecular pharmacology of

anticancer drug resistance; molecular aspect of carcinogenesis, mutagenesis, and teratogenesis.

Lee, Tony, J-F., Professor, Ph.D., (Springfield), West Virginia University, 1973; 1975. Neuromuscular transmission in cerebral blood vessels.

Naritoku, Dean, Associate Professor, M.D., (Springfield), Chicago Medical School, 1981; 1987. Mechanisms of epilepsy and seizure susceptibility, functional neuroanatomy of seizures, GABA receptor function, clinical pharmacology.

Ramkumar, Vickram, Assistant Professor, Ph.D., (Springfield), University of Maryland, 1986; 1992. Molecular pharmacology of adenosine receptors in cardiovascular system.

Rybak, Leonard P., Professor, M.D., Ph.D., (Springfield), University of Minnesota, 1973; 1981. Investigation of mechanisms controlling ionic composition and resting potentials in the peripheral auditory apparatus using chinchilla model.

Somani, Satu, Professor, Ph.D., (Springfield), Liverpool University, England, 1969; 1976. Drug disposition.

Woods, W. Thomas, Professor, Ph.D., (Springfield), Wake Forest University, Bowman Gray School of Medicine; 1975; 1989. Cardiovascular cell biology, developmental biology, and cardiovascular pathophysiology.

Graduate courses of study leading to the Master of Science and Doctor of Philosophy degrees in pharmacology are offered by Southern Illinois University School of Medicine, Department of Pharmacology. To receive an advanced degree in Pharmacology, students must be admitted and fulfill the requirements of both the Graduate School and the pharmacology graduate program. Course offerings in the graduate program have been designed so that graduate students may acquire a broad basic knowledge as well as research experience in different areas of pharmacology. Graduate students may choose from a diversity of specializations when selecting a research adviser and a research topic. Excellent, well equipped research facilities allow the acquisition of a variety of techniques and methods.

The minimum requirements for admission to an advanced degree program in pharmacology are that all students must have an undergraduate degree in one of the biological sciences with at least one year of biology including physiology and a biochemistry course. Students may be admitted with deficiencies in these prerequisites, but they must remedy them at an accredited University which is approved by the Graduate School prior to completion of PHRM 550 a and b. Students with undergraduate training in related areas, such as chemistry, physics, mathematics, computer science, psychology, or engineering are strongly encouraged to consider graduate work in pharmacology.

Unrestricted admission into the master's program requires an undergraduate grade point average (GPA) of 3.0 (A = 4.0). For unrestricted admission into the doctoral program, a GPA of 3.25 (A = 4.0) on all course work is required. Specific requirements are described in the sections, "Specific Requirements for a Master of Science Degree in Pharmacology" and "Specific Requirements for a Doctoral Degree in Pharmacology."

In addition to the above general requirements, each applicant must submit *directly to the Department of Pharmacology*:

1. A completed application.
2. Original transcripts for all undergraduate and graduate coursework must be transmitted and received from each university or college attended by the applicant.
3. A brief (300-600 words) typed statement of goals and ambitions indicating why the applicant wishes to do graduate work in pharmacology.
4. Scores of the Graduate Record Examination (GRE) including scores on (a) the general and (b) one advanced section (biology or chemistry) taken within the past 12 months.
5. Three letters of recommendation from faculty who know the applicant's potential, written on forms supplied by the Department of Pharmacology.
6. International students must submit or request a copy of the TOEFL scores. The Department of Pharmacology and the Graduate School require a score of 550 or better on the TOEFL.

Equivalent course work completed at other institutions or in other collegiate units may be substituted for certain course requirements for graduate course work in pharmacology if approved by the pharmacology graduate program committee and the Graduate School. After receipt of all of the above requirements and approval by the Department of Pharmacology, the student's application and transcript are then transmitted to the Graduate School.

Retention

All retention rules will be met. Additional departmental requirements are described below.

Master's Degree. An overall GPA of 3.0 (A = 4.0) in all graduate work in the program is required for retention. Any grade below B in a pharmacology core course must be compensated for by retaking the course and earning an A or B grade.

Doctor of Philosophy Degree. An overall GPA of 3.0 (A = 4.0) in all graduate work in the program is required for retention. Any student who makes a grade below a B in a pharmacology core course with the exception of PHRM 501 will not be retained in the Ph.D. degree program of the Department of Pharmacology.

Financial Assistance

The pharmacology graduate program can offer financial assistance to applicants which are accepted into the program. Application for departmental fellowships is made directly to the Department of Pharmacology. Information and application forms for scholarships and loans may be obtained through the program director. Time limits for receiving support are governed by the Graduate School. Renewal of support is contingent upon satisfactory progress of the student in course work and research and upon time limitations for support.

Curriculum Requirements Common to the M.S. and Ph.D. Degrees in Pharmacology

Formal Courses. All graduate students are required to complete formal course work in 2 areas: (1) the M.S. or Ph.D. program core courses and (2) electives which are shown below:

Master's Program Core. PHRM 551, 550a, 550b, 501 (4 semester hours), 500 every semester on campus after completion of 4 semester hours of 501. Also, an additional 6 hours of advanced course work which are graded A–F are required and must include PHRM 555 and/or 574.

Doctoral Program Core. PHRM 551, 550a, 550b, 501 (4 semester hours), 500 every semester on campus after completion of 4 semester hours of 501, 555, 574 and one of the elective courses.

Elective Courses. Readings or Research in Pharmacology (PHRM 590), Geriatric Pharmacology (PHRM 560), Principles of Toxicology (PHRM 565), Advanced Cell Biology (MICR 530), Advanced Immunology (MICR 551), Cellular Immunology (MICR 552), Advanced Medical Microbiology/Immunology (MICR 553).

Maximum course work for full-time graduate students is 16 hours per semester; 12 hours is considered average. For a student with a half-time assistantship, 12 hours is the maximum, 6 hours is the minimum.

Research Tools. The research tool is an integral part of a research-oriented degree and is intended to enhance the student's ability to conduct a successful research career. All graduate students must acquire appropriate research tools as required by the Graduate School and the graduate student's dissertation/thesis and research committee. Master's students are encouraged, but not required, to attain competence in at least one research tool, and doctoral students are required to attain competence in at least two research tools. Requirements for a research tool may be satisfied by establishing proficiency in statistics, computer sciences, electronics, advanced mathematics, electron microscopy, foreign language (Russian, German, or French), or a technique which is acceptable to the student's dissertation/thesis and research committee. The student should not expect to use courses which are required by the graduate program to meet a tool requirement. To satisfy the requirement for proficiency in a research tool, the student should be able to demonstrate directly that they have gained expertise in the area of the tool. Examples of satisfactory exhibition of expertise could be a course grade of at least a B, an S in a course graded by S/U, or a letter from a teacher who is acceptable to the graduate dissertation/thesis committee certifying to the student's mastery of the tool. Other examples that could be acceptable

include publication of a paper or presentation of material which employs that expertise.

Student Advisement. An advisory system in pharmacology will help students in planning their program. Upon admission to the master's or doctoral program, students will be advised by the pharmacology graduate program director until a research adviser is chosen by the student. The programs outlined by students, their advisers, and thesis/dissertation committees are subject to approval of the pharmacology graduate program committee. Students should select their research adviser no later than the end of their second (master's) and third (doctoral) semester in residence. The choice of adviser, and subsequently the thesis/dissertation committee, is an important step and should be carefully considered.

Thesis or Dissertation Committee. As soon as possible, a graduate student must select a research adviser; and a thesis or dissertation committee should be selected. For a student in the master's program, the thesis committee will consist of a minimum of 4 members: the student's research adviser (chair), 2 graduate faculty members from pharmacology and 1 graduate faculty member from outside pharmacology. For a student in the doctoral program, the dissertation committee will consist of a minimum of 5 members: the student's research adviser (chair), 3 graduate faculty members from Pharmacology, and 1 graduate faculty member from outside pharmacology. Members of this committee should be able to contribute significantly to the area of the student's research program. The student's research adviser, through the chair of the Department of Pharmacology, will request approval of this committee by the dean of the Graduate School. The Chair of the Department of Pharmacology and the graduate program director are ex-officio members for all committees upon which they are not already members.

REQUIREMENTS FOR ADVANCED DEGREES IN PHARMACOLOGY

Specific Requirements for a Master of Science Degree in Pharmacology

GENERAL REQUIREMENTS

1. A minimum of 2 years of full-time study (1 year in residence) is required for a master's degree.
2. A total of 30 semester hours at the 400 and 500 level is required for a master's degree and at least 15 of these hours must be in 500-level courses. No less than 21 hours of graded (A-F) graduate coursework (400 and 500 level) with a cumulative GPA of 3.00 is required. No more than 6 hours of PHRM 599 may be taken for credit.
3. A written comprehensive examination must be passed with a grade of *B* or better. It will be prepared, conducted, and evaluated by the pharmacology graduate program committee and will be given each fall and spring semester, as needed. This examination will become a part of the student's permanent file.
4. Before significant research has begun, a thesis proposal is required. The thesis proposal will be presented in a pharmacology seminar. Immediately following the seminar, the proposal will be defended orally before the student's thesis committee. The cover sheet for the graduate student's thesis proposal must be signed by all members of the student's thesis committee and filed with the graduate program director.
5. A thesis must be completed in the student's research area of interest and receive approval of the student's thesis committee. The thesis is expected

to be a competent, original research project carried out in a selected area under the research adviser's supervision. It should include a statement of the problem, an adequate review of literature, a careful analysis of results by whatever methods are appropriate, and an interpretation of the work by a significant source. The student must submit a preliminary draft of the thesis to the adviser at least 10 weeks prior to graduation. A corrected copy must be submitted to other members of the thesis committee no later than 8 weeks before graduation.

6. Results of the thesis research must be defended in a pharmacology seminar which must be announced at least one week in advance by sending out proper notices to the university community. Immediately following the seminar, an oral examination will be conducted by the student's thesis committee, and it will cover the thesis. Any member of the university community may attend this examination and may participate in the questioning and discussion, subject to reasonable time limitations imposed by the committee chair. Only committee members may vote or make recommendations concerning acceptance of the thesis and the oral examination.
7. The student will be recommended for the degree if members of the student's thesis committee judge both the thesis and the performance at the oral examination to be satisfactory. Evaluation forms will be completed by the student's thesis committee. If approved, a thesis approval form will be completed, signed by the student's major adviser and the chair of the Department of Pharmacology, and transmitted to the Graduate School. The examination may be repeated once, at least 3 months after the first examination. A second failure will result in dismissal from the pharmacology graduate program.
8. Each student is required to have 6 semester hours of PHRM 599, Thesis Research. Each student although having completed all course work and registered for the minimum of thesis research hours is required to remain registered until completion of the degree.
9. It is the student's responsibility to give 2 appropriate unbound copies of the thesis to the Graduate School. One bound copy should be provided to the Graduate Program Director and 1 to the adviser at least 3 weeks prior to graduation.
10. Below is a representative schedule of the requirements for the master's degree:

<i>First Year</i>	Credits
Summer Session	
PHRM 551 — Methods in Pharmacology	4
Fall Semester	
<i>Choose Adviser and Formulate Thesis Committee</i>	
PHRM 500a — Principles of Pharmacology	4
PHRM 550b — Principles of Pharmacology	4
PHRM 501 — Introduction to Seminar	<u>1</u>
TOTAL	9
Spring Semester	
<i>Advanced Courses (6 semester hours) which include:</i>	
PHRM 555 — Cardiovascular Pharmacology	
PHRM 574 — Neuropharmacology, or an	
Elective Course (Choose 2 of 3 options)	6
PHRM 599 — Thesis Research	2
PHRM 501 — Introduction to Seminar	<u>1</u>
TOTAL	9

Second Year**Summer Session**

PHRM 501 — Introduction to Seminar	1
PHRM 599 — Thesis research	3

*Thesis Proposal Defense***Fall Semester**

PHRM 501 — Introduction to Seminar	1
PHRM 599 — Thesis Research	4
<i>Written Comprehensive Exam</i>	

Continuing Semesters. Enroll in Thesis Research (PHRM 599) and Pharmacology Seminar (PHRM 500) and if necessary Continuing Enrollment (PHRM 601).

SUMMARY OF REQUIREMENTS FOR MASTER OF SCIENCE DEGREE

1. At least 21 hours of graduate courses with grades of A, B, or C
2. Achievement of a grade point average of at least a 3.0 (A = 4.0)
3. Completion of the research tools required by the thesis committee
4. Completion of 4 semester hours of PHRM 501 with a grade of B or better
5. Oral defense of thesis proposal
6. Comprehensive written exam of course work
7. Submission of thesis to adviser (10 weeks prior to graduation)
8. Corrected thesis to thesis committee (8 weeks prior to graduation)
9. Announcement of thesis defense (1 week prior notice)
10. Oral defense of thesis
11. Submission of approved thesis to Graduate School (2 copies), graduate program director (1 copy), and adviser (1 copy) 3 weeks prior to graduation
12. Submission of department clearance form

Specific Requirements for a Doctoral Degree in Pharmacology**GENERAL REQUIREMENTS**

1. Students entering the doctoral program in pharmacology should meet as a minimum the entrance requirements listed for the Master of Science degree program. In addition, it is strongly recommended that the doctoral student have completed calculus and physical chemistry. Students entering the doctoral program in pharmacology may choose to be admitted under 1 of 4 options: the post-master's option, a direct entry (post-baccalaureate) option, accelerated entry (from a master's program) option, or master's equivalency. International students must demonstrate verbal and written proficiency in English.
 - a. The *Post-Master's Entry Option* is offered to the student who has a master's degree, excelled academically, and plans to continue research and scholarly work in a chosen field. The Graduate School requires that the student meets all general requirements for admission and has a GPA of 3.25 (A = 4.0).
 - b. The *Direct-Entry (Post-Baccalaureate) Option* is offered to the outstanding post-baccalaureate student who has a high potential for independent doctoral level research, has clearly defined professional objectives, and fulfills all the general admission requirements of the doctoral program. To be admitted through the direct-entry option, the student must have the following: a cumulative undergraduate GPA of 3.25 (A = 4.0) for undergraduate course work in biology, chemistry, physics, and, mathematics beyond the freshman level and an outstanding score on the Graduate Record Examination (GRE) on (a) the general part, (b) the advanced part in biology, and (c) the advanced part in chemistry, physics, or mathematics.

- c. The *Accelerated Entry Option* is designed for a student who has completed at least 2 semesters in the Master of Science degree program and makes a commitment to obtain a doctoral degree. This option is recommended by the master's student's thesis committee after a review of the student's credentials and eligibility has been established. To be eligible for this option, the committee must establish: that the student has attained a 3.25 (A = 4.0) GPA in graduate course work, that the student is prepared and able to conduct research at the doctoral level as evidenced through publications, presentations at meetings and seminars, or preparation and oral presentation of the research proposal, and that the student has letters of reference attesting to the student's ability and potential to perform doctoral research. Upon establishing the student's eligibility, the student's thesis committee will prepare a written review of the student's qualifications. Approval of the review must be given by the pharmacology graduate program committee and the chair of the Department of Pharmacology, who will then make recommendation to the Graduate School for waiver of the master's degree or master's equivalency before entry into the doctoral program.
 - d. The *Master's Equivalency Option* is also available to a student who has been in the master's degree program for 2 semesters and makes a commitment to a doctoral degree. master's equivalency may be obtained by preparing a research paper or successfully defending a research proposal supported by written documentation which is accepted by the student's thesis committee, the pharmacology graduate program committee, the chair of the Department of Pharmacology, and the Graduate School.
2. In addition to the courses required by the department, the elective course work requirements for the Ph.D. degree will be established by the student's dissertation committee in accordance with the requirements of the program.
 3. The Ph.D. degree may not be conferred less than 6 months nor more than 5 years after admission to candidacy, except upon approval of the dean of the Graduate School. The student is admitted to the Ph.D. degree candidacy after having completed the residency requirement, the research tools requirement, and the comprehensive written preliminary examination.
 4. A comprehensive written preliminary examination of course work must be passed with a grade of *B* or better. It will be prepared, conducted, and evaluated by the pharmacology graduate program committee and will be given each fall and spring semester as needed. This examination will become a part of the student's permanent file. The preliminary examination may be repeated only once at least 3 months after the examination. Required course work should be completed prior to this examination, but this examination should precede the greater part of the dissertation research.
 5. Before significant research has begun and no later than 5 semesters (excluding summer sessions) after admission into the graduate program, defense of a dissertation proposal must be successfully completed. The dissertation proposal will be presented in written form to the student's thesis/dissertation committee and in a pharmacology seminar. Immediately following this seminar, the proposal will be defended orally before the student's dissertation committee. The cover sheet for the graduate student's dissertation proposal must be signed by all members of the student's dissertation committee and filed with the graduate program director. The dissertation is expected to be a competent, original research project which will make a significant contribution to the body of scientific knowledge. As such, it should be of sufficient quality to merit publication in a peer-re-

- viewed journal. It should include a statement of the problem, an adequate review of literature, a careful analysis of results by whatever methods are appropriate, and an interpretation of the work.
6. The residency requirement for the doctorate must be fulfilled after admission to the doctoral program and before formal admission to doctoral candidacy. The residency requirement is satisfied by completion of 24 semester hours of graduate credit on campus as a doctoral student within a period of not to exceed 4 calendar years. A doctoral student will be permitted to count no more than 6 hours of Dissertation Research (PHRM 600) towards achieving the 24 semester hour residency requirement. To meet the residency requirement, students may enroll in any other course that they have not taken and meets with the approval of their adviser and dissertation committee, e.g. any formal departmental or non departmental courses, and Readings or Research in Current Pharmacological Topics (PHRM 590).
 7. The Graduate School requires completion of the residency requirement before making application to candidacy. Admission to candidacy is granted by the dean of the Graduate School upon recommendation of the student's dissertation committee after the student has fulfilled the residency requirement for the doctoral degree, passed the comprehensive written preliminary examination and met the research tool requirement. The candidate must fulfill all degree requirements within a five-year period after admission to candidacy, or may be required to take another preliminary examination and be admitted to candidacy a second time.
 8. After admission to candidacy, the student must complete 24 hours of dissertation credit, (PHRM 600), complete their dissertation research project, and prepare the dissertation document to meet the requirements of their dissertation committee and the Graduate School. A student who has completed all formal course work, dissertation and candidacy credit requirements but has not completed and defended the dissertation must continue to be registered until completion of the degree.
 9. A preliminary draft of the dissertation should be given to the adviser at least 10 weeks prior to graduation, a corrected copy should be submitted to other committee members no later than 8 weeks before graduation.
 10. Results of the dissertation research must be defended in a pharmacology seminar which must be announced at least 1 week in advance by sending out proper notice. Immediately following the pharmacology seminar, a final oral examination will be conducted covering the dissertation subject and other discipline related matters. Any member of the university community may attend the final oral examination and may participate in the questioning and discussion, subject to reasonable time limitations imposed by the committee chair. Only members of the committee may vote or make recommendations concerning acceptance of the dissertation and final examination. A student will be recommended for the degree if members of the dissertation committee judge both the dissertation and the performance at the final examination to be satisfactory. Evaluation forms will be completed by the committee. If approved, a dissertation approval form will be completed, signed by the student's major adviser and the chair of the Department of Pharmacology, and submitted to the Graduate School. The examination may be repeated once, at least 3 months after the first examination. Failure of the second examination will result in dismissal from the pharmacology graduate program.
 11. It is the student's responsibility to give 2 unbound copies of the dissertation to the Graduate School, along with an abstract of 600 words or less. One bound copy should be given to the graduate program director and one

to the student's adviser at least 3 weeks prior to graduation. All dissertations will be microfilmed and there is a fee.

12. Below is a representative schedule of the requirements for the Ph.D. degree in pharmacology. Note that alternative scheduling will be necessary for those students who have accelerated entry from the master's program, or for those students who already have a Master of Science degree in pharmacology.

<i>First Year</i>	Credits
Summer Session	
PHRM 551 Methods in Pharmacology	4
Fall Semester	
<i>Choose Adviser and Formulate Dissertation Committee</i>	
PHRM 550a Principles of Pharmacology	4
PHRM 550b Principles of Pharmacology	4
PHRM 501 Introduction to Seminar	<u>1</u>
Total	9
Spring Semester	
PHRM 555 Cardiovascular Pharmacology	3
PHRM 574 Neuropharmacology	3
PHRM 501 Introduction to Seminar	1
Elective Course	<u>3</u>
Total	10
Summer Session	
PHRM 600 Dissertation Research or	
PHRM 590 Readings or Research in Pharmacology	<u>3</u>
Total	3
<i>Second Year</i>	
Fall Semester	
<i>Preliminary Exam</i>	
PHRM 590 Readings or Research in Pharmacology and/or	
PHRM 600 Dissertation Research	3
PHRM 501 Introduction to Seminar	<u>1</u>
Total	10
Spring Semester	
<i>Defence of Dissertation Proposal</i>	
<i>Completion of Tool Requirements</i>	
<i>Admission to Candidacy when eligible</i>	
PHRM 600 Dissertation Research	3
PHRM 501 Introduction to Seminar	1
PHRM 590 Readings or Research in Pharmacology and/or	
PHRM 600 Dissertation Research	<u>6</u>
Total	10
Summer Session	
PHRM 590 Readings or Research in Pharmacology and/or	
PHRM 600 Dissertation Research	<u>3</u>
Total	3

Continuing Semesters. Enroll in Dissertation Research (PHRM 600) and Pharmacology Seminar (PHRM 500) and if necessary Continuing Enrollment (PHRM 601).

SUMMARY OF REQUIREMENTS FOR DOCTOR OF PHILOSOPHY DEGREE

1. Achievement of a grade point average of at least 3.25 (A = 4.0)
2. 24 semester hours residency

3. Completion of research tools required by dissertation committee
4. Comprehensive written preliminary exam of course work
5. Completion of 4 semester hours of PHRM 501 with a grade of *B* or better
6. Admission to candidacy
7. Oral defense of dissertation proposal
8. Submission of dissertation to adviser (10 weeks prior to graduation)
9. Corrected dissertation to dissertation committee (8 weeks prior to graduation)
10. Completion of an approved dissertation with 24 hours of dissertation credit
11. Announcement of dissertation defense (1 week prior notice)
12. Oral defense of dissertation
13. Submission of approved dissertation to Graduate School (2 copies), graduate program office (1 copy), and adviser (1 copy) 3 weeks prior to graduation
14. Submission of departmental clearance form
15. All dissertations shall be microfilmed and a fee is required.

Courses (PHRM)

500-1 to 16 Pharmacology Seminar. Presentation of research and current literature in pharmacology. Required of all graduate students in pharmacology after completion of four credit hours of 501. Requires presentation at a Journal Club session each fall semester and a formal seminar each spring semester for duration of registration. Graded *S/U* only. Prerequisite: 501. (Springfield Only.)

501-1 to 4 (1 per semester). Training in interpretation of research and current literature in order to enhance quality of seminar presentation. Enrollment for the initial four semesters is required of all beginning pharmacology graduate students. All other pharmacology graduate students must enroll in 500. (Springfield Only.)

550-8 (4,4) Principles of Pharmacology. A study of chemistry, pharmacodynamic actions, mechanisms of action, absorption, distribution, metabolism, elimination, adverse effects, interactions and toxic effects of drugs currently used in therapeutics. Three to five hours lecture, one to four hours discussion per week. Must be taken in sequence. Prerequisite: organic chemistry, biochemistry, basic courses in physiology, and Physiology 420a,b or equivalent are highly recommended, or consent of coordinator. (Springfield Only.)

551-4 Methods in Pharmacology. The main objective is to acquaint the student with various sophisticated laboratory equipment, basic techniques/principles of pharmacological experiments. One hour lecture and three hours laboratory twice weekly. This course is prerequisite to all advanced pharmacology courses. (Springfield Only.)

552-3 Applied Statistics for the Basic Sciences. This course reviews introductory statistics and focuses on advanced statistics, linear and nonlinear modelling, applicable to basic biomedical sciences. The course will also provide students with experience in the use of statistical package computer programs for data analysis. Prerequisite: a college level introductory statistics course or permission from the instructor.

555-3 Cardiovascular Pharmacology. A study of structure, biochemistry, electrophysiology, and neurogenic and humoral regulation of the cardio-

vascular system in normal and diseased states. Three hours of lecture per week. Prerequisite: 550a,b or equivalent, or consent of course coordinator. (Springfield Only.)

560-3 Geriatric Pharmacology. A study covering age-related changes in the physiology of particular organ systems which lead to the prevalence of many diseases and to altered drug action in the elderly. Research issues in aging will be discussed emphasizing the biological substrates of altered pharmacodynamics and pharmacokinetics in the aged. Prerequisite: 550a,b and consent of course coordinator. (Springfield Only.)

565-3 Principles of Toxicology. This course deals with principles and understanding of phenomena of chemical-biologic interactions; a study of adverse chemical effects on living organisms and risk that chemical exposure poses to man/environment; deleterious, acute, chronic chemical effects on specific organs, tests to predict risks, facilitate search for safer chemicals and drugs and means of rational treatment of manifestations of toxicity; prominent discussion on drugs, medical devices, food additives, pesticides; regulation of toxic chemicals, hazardous wastes, toxic pollutants in water and air; and emphasis on diseases caused by and uniquely associated with drugs, diagnosis and treatments of such intoxicants. (Springfield Only.)

574-3 Neuropharmacology. (Same as Physiology 574.) A detailed examination of the biochemical aspects of neuropharmacology with emphasis on neurotransmitters; their synthesis, storage, release and metabolism in the central and peripheral nervous system. Considerable emphasis is placed on major research developments (both past and present) that influence how one studies the action of drugs on the nervous system. Prerequisite: Physiology 410 and Chemistry 451.

590-1 to 24 Readings or Research in Current Pharmacological Topics. By special arrangement with the instructor with whom the student wishes to work. Graded *S/U* only.

599-1 to 6 Thesis Research. Research for thesis for a master's degree. Hours and credit to be arranged by chair and adviser.

600-1 to 32 (1 to 12 per semester) Dissertation Research. Research for dissertation for the

Ph.D. degree. Hours and credit to be arranged by chair and adviser.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or

research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Philosophy

E-mail: phildept@siu.edu

COLLEGE OF LIBERAL ARTS

Alexander, Thomas, Associate Professor, Ph.D., Emory University, 1984; 1985. American philosophy, classical philosophy, aesthetics, Dewey.

Black, Andrew, Assistant Professor, Ph.D., University of Massachusetts, 1992; 1991. Early modern philosophy, logic, and Leibniz.

Clarke, David S., Jr., Professor, Ph.D., Emory University, 1964; 1966. Philosophy of language, logic.

Diefenbeck, James A., Professor, *Emeritus*, Ph.D., Harvard University, 1950; 1950.

Eames, Elizabeth R., Professor, *Emerita*, Ph.D., Bryn Mawr College, 1951; 1963.

Gaskill, Thomas E., Assistant Professor, Ph.D., Vanderbilt University, 1992; 1993. Asian philosophy, medieval.

Gatens-Robinson, Eugenie, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1983; 1974. History and philosophy of science, epistemology, feminism.

Gillan, Garth J., Professor, Ph.D., Duquesne University, 1966; 1969. Critical theory, continental philosophy.

Hahn, Lewis E., Professor, *Emeritus* and Editor of Library of Living Philosophers, Ph.D., University of California, 1939.

Hahn, Robert, Associate Professor, Yale University, 1976; 1982. Greek philosophy, philosophy and history of science, Kant.

Hickman, Larry A., Professor, Ph.D., University of Texas at Austin, 1971; 1993. American philosophy, philosophy of technology.

Howie, John, Professor and *Chair*, Ph.D., Boston University, 1965; 1966. Bioethics, ethics, American idealism.

Kelly, Matthew J., Associate Professor, *Emeritus*, Ph.D., University of Notre Dame, 1963; 1966.

Manfredi, Pat A., Assistant Professor, Ph.D., University of Notre Dame, 1983; 1994. Philosophy of mind, epistemology, metaphysics, recent analytic philosophy.

Plochmann, George Kimball, Professor, *Emeritus*, Ph.D., University of Chicago, 1950; 1949.

Schedler, George, Professor, Ph.D., University of California, San Diego, 1973; 1973. Philosophy of law, ethics, social philosophy.

Steinbock, Anthony J., Associate Professor, Ph.D., State University of New York, Stony Brook, 1993; 1995. Contemporary French and German philosophy, recent European philosophy, 19th century philosophy.

Summerfield, Donna M., Assistant Professor, Ph.D., University of Notre Dame, 1984; 1990. Wittgenstein, epistemology, analytic philosophy.

Tyman, Stephen, Associate Professor, Ph.D., University of Toronto, 1980; 1980. Eighteenth and 19th century European philosophy, phenomenology, existentialism.

The Department of Philosophy offers a wide range of advanced courses in the major areas within the field leading to the M.A. and Ph.D. degrees. Students are offered a diversified curriculum not dominated by one school of thought or method of approach. The broad range of specializations represented by the faculty exposes students to a variety of aspects of philosophy and at the same time permits them to concentrate on their own particular area of interest. Graduate-level courses in such allied fields as the natural and social sciences, the arts, linguistics, law, and women's studies offer supplements to the philosophy curriculum.

Graduate courses in philosophy may be used as a minor in programs leading to the Master of Arts or Master of Science in Education degrees. Students who do not plan to continue work in philosophy beyond the master's degree level are encouraged to elect a graduate minor or to combine philosophy with another subject in a 40-hour double major.

All graduate students in philosophy are expected to have some supervised experience in teaching basic work in the field, either through regular teaching assistantships or through special assignments. Opportunities for intern experience at area junior or community colleges are made available.

Admission

Admission to the philosophy graduate program requires the following:

1. An application form to be sent to the department. A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.
2. Official transcripts of each school attended to be sent to the department.
3. A sample of written work, e.g., a term paper written for an undergraduate philosophy class, to be sent to the department's director of graduate studies.
4. Three letters of recommendation from individuals familiar with the student's work should be requested by the applicant to be sent to the department's director of graduate studies.
5. Graduate Record Examination verbal and quantitative scores are requested but not required to be submitted to the department. They are required for those applying for fellowships. TOEFL scores of at least 550 are required for all foreign students. These scores should be sent directly to the department. Scores for the Test of Spoken English are strongly recommended for foreign students applying for teaching assistantships.

The department expects an applicant for admission to its graduate program to have had at least 15 semester hours in philosophy or closely related theoretical subjects, including at least one semester in ethics, one in logic, and a year in the history of philosophy. The department may waive a portion of this requirement in favor of maturity and of quality of breadth of academic experience. Applicants will be required to make up serious background deficiencies by taking appropriate undergraduate philosophy courses without credit.

Application for financial assistance is made by filling out a financial assistance form. Applicants for Graduate School and Morris Fellowships should send these applications to the department by February 1 of the academic year preceding that for which application is made. Applications for departmental graduate assistantships should be sent to the department by April 1 of that year.

Entry into the Ph.D. Program. There are three routes by which a student may enter the doctoral program. The standard one is by completion of an M.A. degree in philosophy at an accredited institution. There are also two alternatives available in special circumstances.

Direct Entry. Direct baccalaureate degree entry into the doctoral program is possible for students who in addition to meeting Graduate School requirements have earned a grade point average of 3.25 or better or have exhibited some other indication of ability to do doctoral-level work in philosophy, such as superior scores on the GRE exam.

Accelerated Entry. After at least one semester in residence, a student enrolled in the M.A. program may petition the department's faculty for accelerated entry into the Ph.D. program. Such entry is permitted only in special circumstances where a student has completed the equivalent of an M.A. degree at another institution or has exhibited some other special qualifications (e.g. papers and publications) for the research or creative activities of doctoral-level study.

Master of Arts Degree

The department's M.A. degree program is designed both for students wishing to continue on for a Ph.D. degree and those who plan to receive a terminal master's degree. For the latter students a minor concentration of up to 9 semester hours outside philosophy is permitted, subject to approval by the director of graduate studies. In order to receive the M.A. degree the student must fulfill the following requirements:

1. Complete 30 semester hours of course work in philosophy or allied fields, 6 of which may be credited toward preparation of a thesis.
2. Demonstrate competence in formal logic during the first year of residence either through appropriate course work or by passing with a grade of *B* or better an examination equivalent to the Philosophy 420 final suitably supplemented with additional materials on Aristotelian logic.
3. Pass an M.A. comprehensive examination on the history of philosophy to be taken no later than in the fall semester of the student's second year of graduate work.
4. Demonstrate reading knowledge of one foreign language by passing with a grade of *B* or better the appropriate 488 language courses or passing an examination offered through the Department of Philosophy, or by fulfilling the terms of some alternative agreement with the director of graduate studies. This course does not count towards the fulfillment of 1 above.
5. Fulfill a research writing requirement by either: a) writing an M.A. thesis of approximately 50 pages; or b) submitting 3 edited research papers written in conjunction with graduate seminars. This requirement should normally be met no later than one's second year of residence. The candidate for the M.A. degree will take an oral examination conducted by a 3 member faculty committee on the research subject.

Doctor of Philosophy Degree

The Ph.D. degree in philosophy is designed to prepare students for college teaching and for research in their field of study. In order to receive the Ph.D. degree the student must fulfill the following requirements:

1. Complete 30 semester hours of course work in philosophy or allied fields beyond the M.A. degree.
2. Demonstrate competence in formal logic during the first year of residence as required for the M.A. degree.
3. Demonstrate a background in the history of philosophy by passing the department's M.A. comprehensive examination on the history of philosophy. Incoming doctoral students will be expected to take this examination within the first year after entering the Ph.D. program.
4. Fulfill a research tool requirement in one of the following ways: a) demonstrating a reading knowledge of 2 foreign languages by passing the appropriate 488 language courses with grades of *B* or better; b) showing an appropriately higher proficiency in 1 language; or c) demonstrating a reading knowledge of 1 foreign language and completing satisfactorily at least 2 courses at the graduate level in an outside area approved by the director of graduate studies, or, through some alternative arrangement with the director of graduate studies. Neither these courses nor the 488 courses referred to in a) count toward the fulfillment of 1 above.
5. Pass a written preliminary examination on the following 4 areas: metaphysics and philosophy of religion; epistemology and philosophy of science; value studies (ethics, social philosophy, and aesthetics); and an area of historical specialization. This examination will normally be taken only after the student has accumulated at least 24 hours of credit beyond the M.A. degree.
6. Write a doctoral dissertation under the supervision of a faculty dissertation committee. This dissertation is started only after the student has completed 30 hours of course work beyond the M.A. degree and has been admitted to candidacy for the Ph.D. degree. The student's dissertation proposal must first be approved by his dissertation committee. The student must complete at least 24 hours of Philosophy 600 for dissertation hours credit. Upon completion of the dissertation, the student is given an oral ex-

amination on it and related topics. Should a student fail to complete the dissertation within 5 years after admittance to candidacy, the student may be required to take an oral examination (usually administered by the internal members of the dissertation committee) to be admitted to candidacy a second time.

Courses (PHIL)

400-3 Philosophy of Mind. An investigation of the philosophic issues raised by several competing theories of mind, focusing on the fundamental debate between reductionistic accounts (e.g., central state materialism, identity theories of the physical and mental) and views which reject such proposed reductions. Traditional and contemporary theories will be examined. Designed for students in the life and social sciences with little or no background in philosophy as well as philosophy students.

415-3 Logic of Social Sciences. (Same as Sociology 415.) An examination of the theoretical structure and nature of the social sciences and their epistemological foundations. The relationship of social theory to social criticism; theory and praxis. Historical experience and social objectivity. Social theory as practical knowledge.

420-3 Symbolic Logic. Survey of basic concepts, decision procedures and proof techniques of modern symbolic logic.

422-3 Semiotic. (Same as Speech 447.) Introduction to Semiotic as the general theory of signs, including natural signs, signals and linguistic expressions. Concentration on contrasts and comparisons between language and more primitive types of signs.

425-3 Philosophy of Language. (Same as Speech Communication 465 and Linguistics 425.) An investigation into the way in which language is based on the nature of human cognitive structures, including metaphor, prototypes, frames and various kinds of imaginative structure. Central topics include the grounding of meaning and conceptual structure in bodily experience, the role of imagination in reasoning, and the metaphorical nature of thought.

435-9 (3,3,3) Philosophy of Science. (a) Philosophy of science. Critical survey of influential description of scientific methods and theory construction. Topics include the relationship between observation and theory confirmation, explanation, prediction, theory of change and discovery, view of scientific rationality. Historical cases will serve to focus the discussion. (b) Philosophy of special sciences. This course will focus on philosophical issues within a specific science such as biology, physics or psychology. Theory, method and historical development of the specific science will be examined. (c) Special topics in the philosophy of science. This course will provide a detailed focus on specific orientation or topic relevant to philosophy of science. Topics would include naturalized epistemology, evolutionary epistemology, history and philosophy of science, feminist epistemology, modern science and philosophy of nature.

441-3 Philosophy of Politics. (Same as Political Science 403.) The theory of political and social foundations; the theory of the state, justice and revolution. Classical and contemporary readings such as: Plato, Aristotle, Hobbes, Locke, Rous-

seau, Marx, Dewey, Adorno and others. Prerequisite: 340 or Philosophy 102 or consent of instructor.

443-3 Philosophy of History. The rise of historical objectivity and the science of history. Classical and modern theories of history. History as the foundation of social knowledge. The critique of history as universal perspective. Prerequisite: consent of instructor.

446-3 Philosophical Perspectives on Women. (Same as Women's Studies 456.) Discussion of contemporary views of women and social issues from a feminist perspective.

460-3 Philosophy of Art. We will examine several important theories that define art by focusing in on only one aspect, for example, imitation, expression, form, institutional setting or even indefinability. What role does imagination play in each of these accounts, and does this tell us something important about how people experience their world?

468-9 (3,3,3) Kant. (a) First critique; (b) Theory of morality; (c) Aesthetic theory.

469-3 Hellenistic and Roman Philosophy to Augustine. The career of philosophy during the Hellenistic, Roman and Early Medieval Period, especially as a means of personal salvation exploring such figures and movements as: Epicurus, Stoicism, the Middle Academy, Skepticism, Gnosticism, Plotinus, Early Christianity, Augustine and Boethius. Prerequisite: 304 or consent of instructor.

470-6 (3,3) Greek Philosophy. (a) Plato. A general survey of the Platonic dialogues from the Socratic period through the middle, with some selections from the Late period. Such Dialogues will be emphasized as: Protagoras, Gorgias, Euthydemus, Charmides, Meno, Phaedo, Symposium, Republic, Phaedrus, Sophist and Timaeus. (b) Aristotle. A general survey of the Aristotelian philosophy including his theory of nature, metaphysics, ethics and political philosophy. Readings will consist of selections from the corpus. Prerequisite: 304 or consent of instructor.

471-3 Medieval Philosophy. An examination of the synthesis of Greek philosophy with the Judeo-Christian and Islamic religions, exploring such figures as Augustine, Boethius, Avicenna, Averroes, Abelard, Maimonides, Thomas Aquinas, Duns Scotus, Ockham and Cusanus. Prerequisite: 304 or consent of instructor.

472-6 (3,3) The Rationalists. (a) Descartes. A study of the Philosophy of Rene Descartes, concentrating on his major writings, *Meditations*, *Discourse on the Method*, and *Principles of Philosophy*, as well as his philosophical correspondence. May include study of Descartes's relation to the later Rationalists. (b) Study of the philosophy of one or more of Spinoza, Leibniz, Arnauld, Malebranche, Wolff. May include study of the relation

of these philosophers to Descartes. Prerequisite: 205 or consent of instructor.

473-6 (3,3) The Empiricists. (a) Locke; (b) Hume. Study of the principles of British empiricism as represented by either (a) Locke or (b) Hume. May also include study of Berkeley. Prerequisite: 305 or consent of instructor.

474-12 (3,3,3,3) 19th Century Philosophers. (a) Hegel; (b) Kierkegaard; (c) Marx; (d) Nietzsche. Prerequisite: 306 or consent of instructor.

475-3 Asian Philosophy. Topics in Confucianism, Taoism or Buddhism.

480-3 History of Analytic Philosophy. An introduction to the works of several major 20th century philosophers in the analytic tradition, including several of the following: Frege, Russell, Moore, Wittgenstein (early and later), members of the Vienna Circle, Ayer, Ryle, Quine, Putnam, Davidson. Includes discussion of challenges to the tradition that have developed within it.

482-3 Recent European Philosophy. Philosophical trends in Europe from the end of the 19th Century to the present. Phenomenology, existentialism, the new Marxism, structuralism and other developments. Language, history, culture and politics.

486-3 Early American Philosophy. From the Colonial Era to the Eve of World War I. This course will trace the transplantation of European philosophy to the New World and watch its unique process of development. Movements such as Puritanism, the theory of the American Revolution, the philosophical basis of the Constitution, transcendentalism, idealism, Darwinism and pragmatism and such figures as: Jonathan Edwards, Thomas Jefferson, James Madison, Ralph Waldo Emerson, Josiah Royce, Charles Sanders Peirce and William James.

487-3 Recent American Philosophy. From World War I to the present. The major American philosophers of the 20th Century, covering such issues as naturalism, emergentism, process philosophy, logical analysis and neopragmatism. Figures include: John Dewey, George Herbert Mead, George Santayana, Alfred N. Whitehead, C.I. Lewis, W.O. Quine and Richard Rorty.

490-2 to 8 Special Problems. Hours and credits to be arranged. Courses for qualified students who need to pursue certain topics further than regularly titled courses permit. Special topics announced from time to time. Students are invited to suggest topics. Prerequisite: consent of department.

500-3 Metaphysics. Recent writers and current problems in metaphysics.

501-3 Philosophy of Religion. Analysis of a problem in philosophical theology or the phenomenology of religion or of the work of a particular thinker.

505-3 Theology and Philosophy. Topics taken from the exchanges between theology and philosophy in the modern period: natural theology and atheism, the metaphysics of being and God, ethics of reason and faith, secular and salvation history, politics and liberation theology, reason and faith in cross-cultural contexts, hermeneutics and epistemology. Prerequisite: preparation in theology and philosophy; consent of the instructor.

510-3 Problems of the Person. Discussion of metaphysical questions surrounding persons and

their bodies. The particular focus of the seminar will vary as follows: (a) Intentionality, (b) Consciousness, (c) Freedom, (d) The self. Prerequisite: 400 recommended.

520-3 Philosophy of Logic. Topics in logic, with emphasis on issues in the philosophy of logic such as the status of modal logics and three-valued logics.

524-3 Contemporary Analytic Philosophy. A detailed examination of one or more issues of concern to contemporary philosophers in the analytic tradition. Possible topics include: the nature of intentionality; the possibility of priori knowledge; response to skepticism/relativism; virtue-based approaches to ethics and epistemology.

530-3 Theory of Knowledge. An examination of 20th Century trends in epistemology, including one or more of the following: traditional foundationism and its demise; contemporary theories of knowledge and justification; skepticism and contemporary response to it; the possibility of a prior knowledge.

542-3 Political and Legal Philosophy. Relations of law, morality, and politics, and consideration of problems and issues in philosophy of law.

545-3 Ethics. An examination of the fundamental assumptions underlying twentieth century British and American moral theory. Special attention is given to recent attempts to develop a psychologically realistic moral philosophy that avoids both moral absolutism and extreme forms of relativism.

560-3 Aesthetics. Selected topics or writings.

562-3 Philosophy of Human Communication. (See Speech Communication 562.)

570-3 American Idealism. One or more American idealists. Recent seminars have been devoted to the thought of Brand Blanshard and Peter A. Bertocci.

575-30 (3,3,3,3,3,3,3,3,3,3) Contemporary Continental Philosophy. (a) Husserl. Constitutes an introduction to phenomenology as it was practiced by the originator of the modern movement. Special attention to the role of the transcendental reduction and other methodological issues. Consideration given to the influence that Husserl has had upon subsequent developments in phenomenology. (b) Heidegger. Concentrates on the specific development of Heideggerian phenomenology as evidenced in his early writings and transformed in his later. Special attention to the problems of time, ontology, language and the project of the destruction of the history of metaphysics. (c) Sartre. Focuses on the contribution phenomenology and existentialism made by the leading synthesizer of these two movements. Special attention to problems of imagination, affectivity, dialectic and ontology, as well as social and political questions. (d) Merleau-Ponty. Concentrates on Merleau-Ponty's work in extending phenomenology into the region of lived and embodied experience. Special attention to the problem of embodiment, the question of lived time and lived space, as well as issues of the theory of signs and language. (e) Ricoeur. Concentrates on the analysis of selective texts of Paul Ricoeur from his early philosophy of the will to his later writings on metaphor and time: *Symbolism of Evil*, *On Metaphor*, *Time and Narrative*. (f) Foucault. An analysis of the relationship between power and

knowledge in *Discipline and Punish* and *The History of Truth*. (g) Derrida. Examines texts from *On Grammatology* to *Truth in Painting*. Course focuses upon epistemological and metaphysical consequences of deconstruction. (h) Lyotard. Main interest of the course is the epistemological and ethical consequences of the debate about post-modernism in *Knowledge and the Postmodern Condition* and *The Differend*. (i) Adorno. An examination of history, language, ethics and politics in the major writings of Theodor Adorno: *The Negative Dialectic* and *Aesthetic Theory*. (j) Habermas. An examination of the foundations of universal pragmatics in *The Theory of Communicative Action* and related earlier texts.

577-6 (3,3) Classical American Philosophy.

(a) Peirce and James. This course will focus on various aspects of the philosophies of Charles Sanders Peirce and William James. Such topics as the critique of Cartesianism, pragmatism, semiotics, evolutionary metaphysics, radical empiricism and the will to believe will be covered. (b) Dewey and Mead. This course will focus on the thought of John Dewey and George Herbert Mead, focusing upon such themes as the influence of Darwin, the organism-environment circuit, nature and experience, aesthetic experience, the social self and descriptive metaphysics.

580-3 The Pre-Socratics. The emergence of Greek philosophy in the sixth century B.C., the Milesians, Heraclitus and the Pythagoreans; the Eleatic movement and Parmenides, and the critical systems of Empedocles, Anaxagoras, and atomism; concluding with a discussion of the Sophistic movement and Socrates. Epic, lyric and dramatic literature of the period may be examined as well as philosophical writings.

581-3 Plato. Through study of selected dialogues and reconstruction of Plato's system as a whole. Discussions and reports.

582-3 Aristotle. Intensive reading on several texts, analyzing selected portions of Aristotle's thought.

586-3 Wittgenstein. A critical examination of (a) the early work of the Austrian philosopher Ludwig Wittgenstein and his precursors and/or (b) the later work of Wittgenstein and his impact on contemporary analytic philosophy. Emphasis on (a) the *Tractatus Logico-Philosophicus* and/or (b) the *Philosophical Investigations*. Includes discussion of some of the following: the picture theory of representation; the doctrine of showing; the relationship of thought and language; ethics and the mystical; the early Wittgenstein's importance and influence; Wittgenstein's later criticisms of his early work; the possibility of rule-following; private language; meaning, use and language-games; the later Wittgenstein's importance and influence.

587-3 Kant.

588-3 Hegel.

590-2 to 12 (2 to 4 per topic) General Graduate Seminar. Selected topics or problems in philosophy. Graded S/U only.

591-1 to 16 Readings in Philosophy. Supervised readings for qualified students. Prerequisite: students must have written permission from the graduate director to register for more than six hours at each level.

599-2 to 6 Thesis. Minimum of four hours to be counted towards a master's degree.

600-3 to 32 (1 to 16 per semester) Dissertation.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Physical Education

COLLEGE OF EDUCATION

Ackerman, Kenneth, Assistant Professor, M.A., Michigan State University, 1959; 1969. Exercise physiology.

Becque, M. Daniel, Assistant Professor, Ph.D., University of Michigan, 1988; 1990. Exercise physiology.

Blinde, Elaine M., Associate Professor, Ph.D., University of Illinois, 1987; 1987. Social-psychology of sport.

Brechtelsbauer, Kay, Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1980; 1965. Motor behavior.

Carroll, Peter, Assistant Professor, Ph.D., Pennsylvania State University, 1970; 1969. Pedagogy.

Good, Larry, Associate Professor, Ed.D., Temple University, 1968; 1967. Kinesiology.

Knowlton, Ronald, Professor and Chair, Ph.D., University of Illinois, 1961; 1961. Exercise physiology.

McCallister, Sarah, Assistant Professor, Ed.D., University of Arkansas, 1989; 1995. Sport management and sport psychology.

Potter, Marjorie Bond, Professor, *Emerita*, Ph.D., University of Southern California, 1958; 1961.

Shea, Edward, Professor, *Emeritus*, Ph.D., New York University, 1955; 1954.

Stotlar, John, Associate Professor, *Emeritus*, D.P.Ed., Indiana University, 1954; 1948.

Thorpe, JoAnne Lee, Professor, *Emerita*, Ph.D., Texas Woman's University, 1964; 1958.

West, Charlotte, Professor, Ph.D., University of Wisconsin, 1969; 1957. Sports management.

Wilson, Donna, Assistant Professor, M.F.A., University of Oklahoma, 1975; 1987. Dance.

Zimmerman, Helen, Professor, *Emerita*, Ph.D., University of Wisconsin, 1951; 1952.

Graduate courses in physical education are offered toward the Master of Science in Education degree with a major in physical education.

The minimum number of hours required in physical education at the master's level is 24. The total number of hours required for the master's degree is a minimum of 30 semester hours.

Master's Degree

The departmental requirements for unconditional admission as a master's degree candidate are:

1. Fulfillment of the requirements for admission to the Graduate School.
2. Presentation of an undergraduate course in kinesiology, physiology of exercise, human anatomy, motor learning, measurement and evaluation, and at least one in educational psychology or psychology of the particular field of the student's specialty. Appeals may be made within the special program areas.
3. Graduate Record Examination (GRE) scores.
4. A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

A student may be conditionally admitted to the program and may be permitted to do graduate course work while removing undergraduate deficiencies.

Requests for transfer of credits from other institutions will be considered by the department only before the completion of the first term of enrollment.

Requirements

The following required courses common to all concentrations are PE 500, 503, and either 592 or 599. The courses are designed to provide common experiences to all students regardless of their specialization. For 599 two bound copies are deposited with the department. Two unbound copies are deposited with the Graduate School.

Courses (PE)

Courses in this department may require the purchase of supplemental materials.

407-2 Advanced Theory and Techniques in the Prevention and Rehabilitation of Athletic Injuries. The application of scientific principles to the theoretical and practical methods of preventing and treating athletic injuries. Prerequisite: Basic Athletic Training Course.

408-2 Physical Fitness: Its Role and Application in Education. An analysis of physical fitness as it relates to the total well-being of people. Specific units on the fitness parameters, hypokinetic disease and physical inactivity, stress, current level of fitness, training programs and the beneficial aspects of regular exercise. Major emphasis is placed upon incorporating current thinking on physical fitness into the development of teaching models.

409-3 Social Aspects of Sport and Physical Activity. This course presents the theoretical and empirical foundations of sport sociology. A research-based approach is used to explore the relationship of sport to various social institutions, as well as the role of social processes (e.g., socialization, discrimination, stratification, conflict) in sport and physical activity contexts.

410-3 Psychological Aspects of Sport and Physical Activity. This survey course presents

the theoretical and empirical foundations of sport psychology. Operating from a conceptual rather than an applied framework, the class develops an understanding of social psychological phenomenon and processes related to participation in sport and physical activity (e.g., personality, anxiety, arousal, achievement motivation, social facilitation, aggression, pro-social behavior, group dynamics.)

412-3 Research and Practice in Applied Sport Psychology. This course examines current research and practice in applied sport psychology. Emphasis will be placed on moving from theory into practice on sport-specific individual differences, motivational approaches and interventions.

418-2 Administration of Aquatics. The study of comprehensive aquatic programs, their implementation and coordination.

420-3 Physiological Effects of Motor Activity. The general physiological effects of motor activity upon the structure and function of body organs; specific effect of exercise on the muscular system. Requires purchase of laboratory manual. Prerequisite: Physiology 209 or equivalent.

421-3 Principles of Skeletal Muscle Action. The neural, physiological and mechanical basis of skeletal muscle action and plasticity in relation to the expression of strength and power. Prerequisite: Physiology 209 or equivalent.

425-2 Current Topics in Athletic Training. This course is designed to study and discuss current issues in athletic training and the health care of the athlete.

426-2 Advanced Techniques and Research in Therapeutic Modalities. Specifically designed for the student who wishes to become an athletic trainer and gain knowledge in the application and current research in therapeutic modalities.

493-2 to 4 Individual Research. The selection, investigation, and writing of a research topic under supervision of an instructor. (a) Dance. (b) Kinesiology. (c) Measurement. (d) Motor development. (e) Physiology of exercise. (f) History and philosophy. (g) Motor learning. (h) Psycho-social aspects. Written report required. Prerequisite: consent of adviser and department chair.

494-2 (1, 1) Practicum in Physical Education. Supervised practical experience at the appropriate level in selected physical education activities in conjunction with class work. Work may be in the complete administration of a tournament, field testing, individual or group work with special populations, administration of athletics or planning physical education facilities. Prerequisite: consent of adviser.

500-3 Techniques of Research. Study of research methods and critical analysis of research literature specifically applied to the areas of motor performance and exercise. Prerequisite: consent of adviser in the Department of Physical Education.

503-2 Seminar in Physical Education. Making a systematic analysis of problems and issues encountered in the conduct of physical education. Selection of a problem or issue that is a concern to physical education and suggestion of solutions.

505-2 to 6 (2 per topic) Topical Seminar in Physical Education. Students may concentrate on different topics each semester dependent upon both the interests of the students and the expertise of the graduate faculty. Prerequisite: consent of instructor.

508-2 Administration of Athletics. Designed to present a broad view of the role of athletics in its relationship to the total educational program, and to examine current practices in athletic management which operate within a framework of recommended policies and rules which govern athletics.

509-3 Administrative Theory and Practice in Physical Education. Selected administrative processes in physical education and the application of theory to the processes. The course attempts to systematize concepts, insights and propositions into a usable form, to increase the understanding of administrative problems, and to expand existing knowledge and thought about behavioral phenomena. Prerequisite: 503 for those with an administrative emphasis.

510-3 Motor Development. In-depth study of the development of gross motor skills from infancy through adolescence, the biological and environmental variables that affect motor development, and individual differences in attaining mo-

tor proficiency. In addition, selected current issues in motor development will be examined. No prerequisite.

511-3 Analysis of Human Physical Movement. Principles and procedures for qualitative analysis and the teaching of mechanical constructs for movement activities. The student completes a cinematographic analysis. Prerequisite: 303 or equivalent.

512-3 Biomechanics of Human Motion. Methods of data collecting and analyzing the biomechanics of human motion under normal and pathological conditions are covered. Students complete a biomechanical study for a one segment motion.

515-3 Body Composition and Human Physical Performance. Physical dimensions of the human body as they influence motor performance and are modified by protracted physical exercise. Prerequisite: 420 or equivalent.

517-2 Athletic and Physical Education Facilities Design, Construction, and Maintenance. Basic principles of design, construction, and maintenance of athletic and physical education facilities based upon program characteristics and potential student enrollment. Emphasis on the development of new materials and trends toward new concepts of design and construction. Prerequisite: 357 or equivalent.

520-3 Metabolic Analysis of Human Activity. Metabolic principles pertinent to human physical performance with emphasis on sport, exercise and occupational activity analysis. A detailed study of oxygen utilization, oxygen debt, mechanisms of oxygen transport as they relate to physiological homeostasis in localized and total body motor activity. Emphasis on the laboratory study of aerobic and anaerobic performance. Prerequisite: 420 or equivalent.

530-2 Research Seminar. This course provides a seminar format for discussing research in the field of physical education, with a major thrust in providing practical experiences for critiquing and disseminating research. Students will explore philosophy of science questions as they relate to the production of knowledge in physical education. A variety of knowledge generation systems will be examined. Prerequisite: 500.

555-1 to 4 Internship in Sport Management. The internship is a culminating experience directly related to the student's intended employment or area of interest. It will, therefore, normally be taken after the predominance of course work is completed. The internship may be completed in any appropriate setting as judged by the faculty associated with the area of sport management. All conditions of placement, conduct and evaluation of the internship will be under the jurisdiction of the appropriate faculty. Graded S/U only.

560-3 Gender and Sport: Sociological and Psychological Perspectives. (Same as Women's Studies 560). This course explores psychological and sociological dimensions underlying the concept of gender and critically examines how gender relates to sport and physical activity. Students will be introduced to non-traditional as well as traditional research that addresses the issue of gender in various physical activity contexts.

590-1 to 4 Readings in Physical Education. Supervised readings in selected subjects. Prerequisite: consent of adviser and department chair.

592-2 to 8 Research in Physical Education. Plan, conduct, and report assigned research studies. Masters students may take up to three credit hours. Doctoral students must enroll for a minimum of six credit hours. Graded *S/U* only. Prerequisite: 500 or equivalent, consent of instructor.

599-1 to 6 Thesis. Graded *S/U* Prerequisite: 500 or equivalent.

600-1 to 32 (1 to 16 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Physics

E-mail: physics@physics.siu.edu

COLLEGE OF SCIENCE

Ali, Naushad, Professor, Ph.D., University of Alberta, Canada, 1984; 1986.

Cutnell, John D., Professor, Ph.D., University of Wisconsin, 1967; 1968.

Gruber, Bruno J., Professor, Ph.D., University of Vienna, Austria, 1961; 1972.

Hart, Charles F., Associate Professor, Ph.D., University of Texas, 1981; 1986.

Henneberger, Walter C., Professor, *Emeritus*, Ph.D., Gottingen University, Germany, 1959; 1963.

Johnson, Kenneth W., Professor, Ph.D., Ohio State University, 1967; 1970.

Malhotra, Vivak, Professor, Ph.D., Kanpur University, India, 1978; 1984.

Malik, F. Bary, Professor, Ph.D., Gottingen University, 1958; 1980.

Masden, J. Thomas, Associate Professor, Ph.D., Purdue University, 1983; 1984.

Migone, Aldo D., Professor, Ph.D., Pennsylvania State University, 1984; 1986.

Nickell, William E., Professor, *Emeritus*, Ph.D., University of Iowa, 1954; 1963.

Sanders, Frank C., Jr., Associate Professor, Ph.D., University of Texas, 1968; 1969.

Saporoschenko, Mykola, Professor, Ph.D., Washington University, 1958; 1965.

Tao, Rongjia, Professor and Chair, Ph.D., Columbia University, 1982; 1989.

Watson, Richard E., Professor, *Emeritus*, Ph.D., University of Illinois, 1938; 1958.

Zitter, Robert N., Professor, Ph.D., University of Chicago, 1962; 1967.

The Department of Physics offers graduate work leading to the Master of Science degree with a major in physics. Graduate courses in physics may also be taken to satisfy teaching specialty requirements for the Master of Science in Education degree major in secondary education or in higher education.

In addition to the general requirements of the Graduate School, the student must complete PHYS 500a (or mathematics equivalent), 510, 520, and 530. Other specific requirements for the master's degrees are as follows.

Master of Science

A reading knowledge of a foreign language or demonstrated competence of computer skill is required. This requirement can be met by passing one of the Educational Testing Service's graduate foreign language examinations for the language option, or by passing FL 488 with a grade of A or B, for the language option, or by passing MATH 475a, CS 464a, or an equivalent course in numerical analysis for the computer skills option. English can be substituted for either of the above requirements at the discretion of the graduate adviser provided it is not the native language of the candidate.

A thesis is required, based upon not more than 6 nor less than 3 semester hours of 599-level credit. The 599 credit requirement is in addition to the minimum of 15-hour requirement at the 500 level as stated in this catalog and should be distributed preferably over several terms of enrollment. Each candidate for an M.S. degree is required to earn one credit in PHYS 581 by lecturing in the graduate seminar and is required to pass an examination, written or oral or both, covering graduate work including the thesis. This examination is given by the student's advisory committee.

Courses (PHYS)

410-3 Mechanics II. Gravitation, continuous media, transformation properties, Lagrangian and Hamiltonian formalisms. Prerequisite: 310 or consent of instructor.

420-3 Electricity and Magnetism II. Induced electromotive force, quasisteady currents and fields, Maxwell's equations, electromagnetic waves and radiation, with applications. Prerequisite: 320 or consent of instructor.

424-3 Digital Electronics for the Scientist. Coordinated two-hour lecture and two-hour laboratory study of digital electronics, microprocessors and minicomputers with emphasis on their application to the experimental research laboratory setting. Topics include Boolean algebra, basic digital techniques, large scale integration devices, analog to/from digital conversion, microprocessors and minicomputers and data acquisition. Prerequisite: 324 or consent of instructor.

425-3 Solid State Physics I. Structure of a crystalline solid; lattice vibrations and thermal properties; electrons in metals; band theory; electrons and holes in semiconductors; opto-electronic phenomena in solids; dielectric and magnetic properties; superconductivity. Prerequisite: 310, 320, 345 and 430 or consent of instructor.

428-3 Modern Optics and Lasers. Properties of electromagnetic waves in space and media, polarization and interference phenomena and devices, electro- and magneto-optic effects, optical gain and lasers. Prerequisite: 420 or consent of instructor.

430-3 Quantum Mechanics I. An introduction to quantum mechanics including its experimental basis and application in atomic physics. Prerequisite: 205c, 310 and 320. Prior or concurrent enrollment in 410 and 420 is desirable.

431-3 Atomic and Molecular Physics I. Atomic spectra and structure; molecular spectra and structure. Prerequisite: 430 or consent of instructor.

432-3 Nuclear Physics I. Basic nuclear properties and structure; radioactivity, nuclear excitation, and reactions, nuclear forces; fission and fusion. Prerequisite: 430 or consent of instructor.

445-3 Statistical Mechanics I. An introductory course in the principles and applications of classical and quantum statistical mechanics, and the elementary kinetic theory of matter. Prerequisite: 345.

450-1 Modern Physics Laboratory. Introduces students to experimental research and encourages them to develop and carry out experiments. Prerequisite: 205c or consent of instructor.

458-2 Laser and Optical Physics Laboratory. Properties of laser beams and resonators, fluorescence and two photon spectroscopy, diffraction, Fourier transformation and frequency filtering, electro- and magneto-optic modulation, fiber propagation and related experiments. Prerequisite: 428 or consent of instructor.

470-1 to 3 Special Projects. Each student chooses or is assigned a definite investigative project or topic. Prerequisite: 310, 320 or consent of instructor.

500-6 (3,3) Mathematical Methods in Physics. Vector spaces and operators in physics. Hilbert

spaces and complete orthonormal sets of functions. Elements and applications of the theory of analytic functions. Methods for the solution of partial differential equations of physics. Prerequisite: Mathematics 407 or equivalent, consent of instructor.

510-4 Classical Mechanics. Generalized coordinates and forces. Lagrangian, Hamiltonian, and variational formulations of mechanics. Central forces, oscillations; normal modes of molecular systems. Prerequisite: 410.

520-6 (3,3) Electromagnetic Theory. Determination of static, electrostatic, and magnetostatic fields. Microscopic and macroscopic theory of insulators and conductors. Maxwell's equations; radiation, propagation and scattering of electromagnetic waves. Electrodynamics and special theory of relativity. Selected topics. Prerequisite: 420.

530-6 (3,3) Quantum Mechanics II. Basic principles; the harmonic oscillator and the hydrogen atom; scattering; approximation and perturbation methods; spin, statistics. Prerequisite: Mathematics 406 or consent of instructor; 500 desirable.

531-6 (3,3) Advanced Quantum Mechanics. Quantum theory of radiation; applications of field theory to elementary particles; covariant quantum electrodynamics; renormalization; special topics. Content varies somewhat with instructor. Prerequisite: 530 and consent.

535-6 (3,3) Atomic and Molecular Physics II. Recent experimental methods in atomic and molecular spectroscopy with applications. Detailed quantum mechanical and group theoretical treatment of atomic and molecular systems. Reactions between atomic systems. Prerequisite: consent of instructor.

545-6 (3,3) Statistical Mechanics II. Principles of classical and quantum equilibrium statistics; fluctuation phenomena; special topics in equilibrium and non-equilibrium phenomena. Prerequisite: 445.

550-3 Computational Physics. Using modern computers to solve physics problems. Integration of ordinary and partial differential equations, interpolation and extrapolation, finite element analysis, linear and nonlinear equations, eigenvalues, optimization, root finding, Monte Carlo simulations, etc. Prerequisite: Mathematics 305, computer language FORTRAN or C, or consent of instructor.

560-6 (3,3) Nuclear Physics II. Fundamental properties and systematics of nuclei, scattering theory, nuclear two-body problem, nuclear models, nuclear many-body problem, electromagnetic properties of nuclei, radioactivity, nuclear reactions. Prerequisite: 530 and consent of instructor.

565-6 (3,3) Solid State Physics II. Fundamental concepts in solid state physics. Lattice vibrations, band theory of solids, the Fermi surface, dynamics of electrons. Transport, cohesive, optical, magnetic and other properties of solids. Prerequisite: consent of instructor.

570-1 to 36 Special Projects in Physics. Each student works on a definite investigative topic under the supervision of a faculty sponsor. The projects are taken from the current research in

the department. Resourcefulness and initiative are required. Graded *S/U* only. Prerequisite: consent of instructor.

571-6 (3,3) X-Ray Diffraction and Electron Microscopy. (See Mechanical Engineering 504.)

575-1 to 12 (1 to 4 per topic for a maximum of three topics) Special Topics in Physics. The courses reflect special research interests of the faculty and current developments in physics. They are offered as the need arises and interest and time permit. Students are required to give presentations. Prerequisite: consent of instructor.

581-1 to 3 (1,1,1) Graduate Seminar. Lectures on special topics by students, faculty, or invited scholars; participation is required of all graduate students. For credit each student may present a seminar in the form of a lecture on a theoretical or experimental topic, a demonstration experiment or apparatus critique. Prerequisite: lectur-

ing experience or concurrent teaching. Graded *S/U* only.

598-1 to 50 (1 to 12 per semester) Research. Maximum credit 50 hours. Graded *S/U* only. Prerequisite: consent of instructor.

599-1 to 6 Thesis.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

699-1 Postdoctoral Research. One credit hour per semester. Concurrent enrollment in any other course is not permitted. Prerequisite: must be a Postdoctoral Fellow.

Physiology

E-mail: rfalvo@som.siu.edu

SCHOOL OF MEDICINE

Banerjee, Chandra, Professor, *Emeritus*, M.D., University of Calcutta, 1955, Ph.D., Medical College of Virginia, 1967; 1974.

Bartke, Andrzej, Professor and *Chair*, Ph.D., University of Kansas, 1965; 1984. Reproductive endocrinology; role of prolactin and growth hormone in the control of hypothalamic, pituitary and testicular function; transgenic animals, seasonal breeding.

Browning, Ronald A., Professor, Ph.D., University of Illinois Medical Center, Chicago, 1971; 1973. Pharmacology, neuropharmacology.

Collard, Michael W., Assistant Professor, Ph.D., Washington State University, 1987; 1993. Transcriptional regulation by cAMP and retinoic acid.

Coulson, L. Richard, Professor, Ph.D., University of Toronto, Canada, 1971; 1978. Cardiovascular physiology and pathophysiology, coronary circulation, myocardial metabolism.

Cox, Thomas C., Associate Professor, Ph.D., Arizona State University, 1979; 1982. Ion transport across epithelial tissue.

Dunagan, Tommy T., Professor, *Emeritus*, Ph.D., Purdue University, 1960; 1962.

Ellert, Martha, Associate Professor, Ph.D., University of Miami, 1967; 1975. Properties of sulfhydryl reagent pCMBS; effects of material hyperthermia and rubella vaccine on pregnant animals and their offspring.

Falvo, Richard E., Professor, Ph.D., University of Wyoming, 1970; 1973. Steroidal control of gonadotropin secretion and immunological approaches to the study of male reproduction.

Ferraro, James S., Assistant Professor, Ph.D., The Chicago Medical School, 1984; 1987. Physiological, behavioral, and reproductive aspects of circadian rhythmicity; photoperiodic response of seasonal breeders; endogenous nature of biological rhythms during spaceflight.

Huggenvik, Jodi I., Assistant Professor, Ph.D., Washington State University, 1985; 1993. Regulation of gene expression during spermatogenesis.

Hunter, William S., Associate Professor, Ph.D., Michigan State University, 1971; 1975. Mechanism of fever and normal thermoregulation in homeothermic animals.

Kaplan, Harold M., Professor, *Emeritus*, Ph.D., Harvard University, 1933; 1949.

Miller, Donald M., Professor, *Emeritus*, Ph.D., University of Illinois, 1965; 1966.

Murphy, Laura, Assistant Professor, Ph.D., Medical College of Georgia, 1983; 1989. Reproductive neuroendocrinology/drug abuse.

Myers, Hurley, Professor, Ph.D., University of Tennessee, 1969; 1971. Cardiovascular physiology, coronary occlusion; vascular smooth muscle hypertension.

Nequin, Lynn, Associate Professor, Ph.D., University of Illinois Medical Center, Chicago, 1970; 1976. Female reproductive physiology; environmental control of neuroendocrine systems and seasonal reproduction.

Russell, Lonnie D., Professor, Ph.D., University of Nebraska, 1974; 1977. Male reproduction system, hormonal control of spermatogenesis; Sertoli cell function; functional morphology of the testis; fertilization.

Shanahan, Michael F., Professor, Ph.D., University of Michigan, 1976; 1985. Insulin action and glucose transport across cell membranes.

Sollberger, Arne, Professor, *Emeritus*, M.D., Caroline Institute of Medicine and Dentistry, Sweden, 1957; 1972.

Steger, Richard W., Professor, Ph.D., University of Wyoming, 1974; 1985. Neuroendocrinology, gerontology, reproductive endocrinology.

Wade, David, Associate Professor, Ph.D., Cambridge University, 1967; 1974. Renal physiology, cell biology.

Yau, William M., Professor, Ph.D., Medical College of Virginia, 1971, 1973. Gastrointestinal physiology.

Graduate courses in physiology may be taken leading to the Master of Science or the Doctor of Philosophy degrees with a major in physiology. Graduate courses in physiology may also contribute to a program leading to a Master of Science degree major in biological sciences or to a teaching specialty for the Master of Science in Education degree major in secondary education or in higher education.

The Department of Physiology offers advanced training in mammalian physiology, cellular and comparative physiology, endocrinology and pharmacology, biophysics, and human anatomy. Students entering the graduate training program are advised to plan the course work so as to acquire a broad knowledge of the field before emphasizing one of these sub-disciplines. The advisory system in the department is set up to help students in planning their work. All graduate training programs in the department are subject to approval of the graduate program committee (GPC) of the department.

Each term the student must be engaged in a training assignment which supplements formal course work and will consist of research or teaching or both. The student is required to have participated in both types of activities, research and teaching, as a graduate student at SIUC as a condition for receiving a graduate degree.

Prerequisites for graduate training with a major in physiology usually include the equivalent of an undergraduate major in one of the biological sciences, plus inorganic and organic chemistry and a minimum of one year each of physics and mathematics. Students with undergraduate training in related areas, such as chemistry, physics, mathematics, computer science, psychology, or engineering are strongly encouraged to consider graduate work in physiology; deficiencies in the requirements listed above can be made up early in graduate training.

Financial Assistance

The Department of Physiology offers financial assistance to qualified applicants accepted by the department. The funds which provide this assistance come from a variety of sources which include: teaching assistantships from the department; university fellowships which are applied for directly by the student; and research assistantships from grants obtained by the graduate program faculty. Students interested in financial assistance should request the appropriate application forms from the Department of Physiology office. Priority for financial assistance will be given to individuals maintaining a good academic status.

The department will support master's students for up to 24 months and Ph.D. students for 48 months on department teaching assistantships. However, every effort will be made to encourage the student and his/her adviser to find alternative sources of funding. Continuation of support will be conditioned on satisfactory performance in areas of academics, research, and teaching. Academic performance will be based on good standing in the Graduate School (3.25 GPA) and passage of the preliminary exam by the end of the third year (Ph.D. students only). Satisfactory research performance will be based on the filing of an approved research proposal by the end of the first (master's) or second (Ph.D.) calendar year and after that time by an annual memo from the student's advisory committee indicating progress in the area of research. It will be the student's responsibility to provide this documentation to the GPC. Evaluation of teaching effectiveness will be carried out by the GPC from sources possibly but not limited to the course coordinator, student evaluations and by direct observation of classes by the GPC.

A department stipend for graduate student research will be available to physiology graduate students working in laboratories of regular physiology department faculty members provided that the student is making satisfactory progress

in their research program and remains in good academic standing (as defined above).

Research Tools

Doctoral students must acquire competence in one research tool and are encouraged to attain competence with two tools. The requirements for a research tool may be satisfied by establishing proficiency in advanced statistics, computer science, electronics, advanced mathematics, electron microscopy, foreign language (with suitability of a particular language being determined by the student's committee), or some technique which is acceptable to the student's advisory committee. Courses which are normally part of a track requirement or are highly recommended for students in a particular track cannot serve as tools for students in that track. For example, students in the anatomy track cannot use electron microscopy, and students in the physiology track cannot use biophysics.

Approval of a given tool by the student's committee will be granted only if the student has demonstrated proficiency by taking a formal course and receiving a grade (preferably *B* or better) or by passing a formal examination given by an expert in that field (preferably a faculty member in the university department where the subject is normally taught).

Master's Degree

The application and transcript(s) should be submitted to the Department of Physiology.

All applicants must submit a brief (300–600 words) typed statement of goals and ambitions indicating why they wish to do graduate work in one of the graduate program tracks and three letters of recommendation from instructors who know their potential. These letters should be written on forms supplied by the department.

The Graduate School requires an earned grade point average (GPA) of 2.70 or better ($A = 4.0$) on all undergraduate work. A minimum GPA of 3.00 ($A = 4.0$) in all undergraduate and graduate work is needed for serious consideration.

The Graduate Record Exam (GRE) is required, and the score on the general part and one advanced part (biology or chemistry) must be submitted with the application.

The graduate program committee of the department will normally examine the credentials, which include the application form, transcript(s), letters of recommendation, goal statement, and GRE scores, only after all materials have been received.

For foreign students, a minimum TOEFL score of 550 is required by the Graduate School. The Department of Physiology strongly encourages that the TSE and TWE (Test of Spoken English and Test of Written English respectively) be taken. Priority for teaching assistantships will be based upon English proficiency.

Advisory Committee

Within the first six months after arrival a student must select an adviser who will help plan course work and will direct research. One faculty member in the graduate program will act as an adviser to new graduate students until they select permanent advisers. The choice of an adviser is a very important step and should be carefully considered. The written consent of the prospective adviser must be obtained and filed in the department office in order to work under his/her direction.

The functions of the adviser are:

1. To serve as chair of the advisory committee.
2. To advise on the selection of other members of the advisory committee (at least three, including one from outside the department) in consultation

with the student and with the approval of the graduate program chairperson. members of the advisory committee should be able to contribute significantly to the area of the student's research program.

3. To direct the student's research and to provide the facilities required.

The advisory committee will be instrumental in planning the course schedule and research activities of the student throughout his/her enrollment in the department. Immediately following the selection of an adviser the names and signatures of committee members on the Graduate Faculty Committee Approval form of the Graduate School (available in the department office) must be filed with the department secretary. The completed form will then be forwarded to the Graduate School for final approval.

Total Hours Required

A total of 30 semester hours at the 400- and 500-level is required for the master's degree. Of the total hours completed, at least 21 of these must be graded (A, B, C) hours. At least 15 of the total 30 must be 500-level courses taken at SIUC. Of these 15, a *minimum* of 3 hours of PHSL 599 (thesis) is *required*. More than 3 hours of 599 may be taken, however only 6 may be counted toward the 500-level requirement.

Thesis

The thesis should represent a competent piece of original research carried out on a specific physiological problem under the adviser's supervision. It should include a statement of the problem, an adequate review of the literature, a careful analysis of results by whatever methods are appropriate, and an interpretation of the work and its significance. Following presentation of the thesis at a department seminar, there will be a final oral examination. The examination will cover the subject of the thesis and other matters related to the discipline.

Doctoral Program

The Graduate School requires a grade point average in previous graduate work of at least 3.25 and acceptance by the academic unit offering the Ph.D. program. See the following pages for accelerated and direct entry options.

The Graduate School requires a grade point average in previous graduate work of at least 3.25 and acceptance by the academic unit offering the Ph.D. program. See the following pages for accelerated and direct entry options.

The graduate program committee of the Department of Physiology discourages applications for graduate study leading to the doctoral degree in physiology from students who have completed both their bachelor's and master's degrees at Southern Illinois University at Carbondale.

The application and transcript(s) should be submitted to the Department of Physiology.

The Graduate Record Exam (GRE) is required, and the score on the general part and one advanced part (biology or chemistry) must be submitted with the application.

All applicants must submit a brief (300-600 words) typed statement of goals and ambitions indicating why they wish to do graduate work in one of the graduate program tracks and three letters of recommendation from instructors who know their potential. These letters should be written on forms supplied by the department.

The graduate program committee of the department will examine the credentials which include the application form, transcript(s), letters of recommendation, goal statement and GRE scores (if applicable) only after all materials have been received.

For foreign students, a minimum TOEFL score of 550 is required by the Graduate School. The Department of Physiology strongly encourages that the TSE

and TWE (Test of Spoken English and Test of Written English respectively) be taken. Priority for teaching assistantships will be based upon English proficiency.

Ph.D. Direct Entry Option

This option is presently available for admission to the Graduate School. Contact the Department of Physiology for further information regarding this option. The Department of Physiology may accept a post-baccalaureate student directly into a Ph.D. program provided that the student has:

1. A cumulative undergraduate grade point average of 3.5 ($A = 4.0$)
2. Undergraduate course work in biology, chemistry, physics, and mathematics beyond the freshman level or an outstanding score on the graduate record exam (GRE) on (a) the general part, (b) the advanced part in biology, or (c) the advanced part in chemistry, physics, or mathematics.

A student admitted to the doctoral program under this option is subject to all existing requirements for the doctoral degree including retention, residency, examinations, dissertation, and all applicable time limits. Students admitted under this option will be required to fulfill all core requirements for their track (area of emphasis). The advisory committee may add extra requirements based on the student's background and program (e.g., course work, etc.). Students who have taken one or more core courses at another accredited university may be given credit toward their core requirements if such courses are deemed equivalent to our core courses by the graduate program committee and department grade requirements are met.

Ph.D. Accelerated Entry Option

The Department of Physiology offers the Ph.D. accelerated entry option to graduate students who have made an early commitment to a doctoral degree and meet certain criteria.

At the end of at least one year of studies at the master's level, the graduate student's advisory committee will review the student's credentials in order to establish eligibility to enter the doctoral program under this option. The student's committee will then make a recommendation that the student continue in the master's program or advance to the doctoral program. In the instances of severe deficiencies in grades or evaluation, recommendation for termination may also be made.

The student's advisory committee must establish that the student is prepared and able to conduct research at the doctoral level. For example, this can be established by publications, presentations at meetings and/or seminars, and preparation and oral presentation of their research proposal.

Further, the student must have a GPA of at least 3.25 ($A = 4.0$) in graduate course work and letters of reference attesting to the student's ability and potential to perform doctoral research.

Upon approval of the student's eligibility, the adviser and/or the advisory committee will prepare a written review of the student's qualifications and submit it for approval to the graduate program committee. They will submit a recommendation to the chair of the Department of Physiology who will submit it to the Graduate School for waiver of a master's degree or master's equivalency before entry into the doctoral program.

The student will need to submit a letter from the graduate program chairperson, an application to the Graduate School (indicating Ph.D.), and the completed Notification of Accelerated Entry Option Students form of the Graduate School.

A student admitted to the doctoral program under this option is subject to all existing requirements for the Ph.D. program including retention, residency, examinations, dissertation, and all applicable time limits.

Please note that only courses taken after admission to the doctoral program will count toward residency.

Advisory Committee

After the first six months of acceptance into the doctoral program a student must select an adviser who will help plan course work and will direct research. One faculty member in the graduate program will act as an adviser to new graduate students until they select permanent advisers. The choice of an adviser is a very important step and should be carefully considered. The written consent of the prospective adviser must be obtained and filed in the department office in order to work under his/her direction.

The functions of the adviser are:

1. To serve as chair of the advisory committee.
2. To advise on the selection of other members of the advisory committee (at least four, including one from outside the department) in consultation with the student and with the approval of the graduate program chairperson. Members of the advisory committee should be able to contribute significantly to the area of the student's research program.
3. To direct the student's research and to provide the facilities required.

The advisory committee will be instrumental in planning the course schedule and research activities of the student throughout his/her enrollment in the department. Immediately following the selection of an adviser the names and signatures of committee members on the Graduate Faculty Committee Approval form of the Graduate School (available in the department office) must be filed with the department secretary. The completed form will then be forwarded to the Graduate School for final approval.

Total Hours Required

The requirements for the Ph.D. degree are these established by the Graduate School, the Guide to Graduate Studies and the student's advisory committee. The Graduate School requires 24 semester hours prior to candidacy and 24 semester hours of dissertation credit.

Preliminary Examination

After satisfactory completion of course work, students must pass a comprehensive examination (both written and oral). The examination will cover the areas of cell physiology, muscle physiology, endocrinology, cardiovascular physiology, respiratory physiology, gastrointestinal physiology, renal physiology, neurophysiology, reproductive physiology, biochemistry, and the student's research area.

The preliminary examination will be taken the first available August test date after completion of the second year of study. The August examination will be given the first full week following the completion of the summer session. Students who fail to pass the August test will be required to retake the examination in January.

The written examination will be taken prior to the oral examination. The oral examination must be taken within 30 calendar days of successful completion of the written examination. The student's committee is encouraged to meet with the student prior to the written preliminary examination to determine whether the student is prepared.

Dissertation

The dissertation is expected to be a competent piece of original research making an addition to the body to scientific knowledge. As such it should be of sufficient quality to merit publication in a peer-reviewed journal. The topic and substance of the dissertation must be approved by the student's committee. Following successful presentation and defense of the dissertation at a department seminar,

there will be a final oral examination. The examination will cover the subject of the dissertation and other matters related to the discipline.

Courses (PHSL)

400-6 (3,3) Concepts in Anatomy. A detailed survey of human anatomy for preprofessional students with an interest in the biomedical disciplines, including radiographic, cross-sectional and developmental anatomy. Three lectures per week. Should be taken in a,b sequence. Prerequisite: 301 and senior standing or consent of instructor.

401-6 (3,3) Advanced Human Anatomy Laboratory. Laboratory dissection of the human body (six hours per week). Primarily for students majoring in physiology or other biological sciences, anthropology, etc. Prerequisite: 400 taken concurrently or prior enrollment in 401.

410-10 (5,5) Mammalian Physiology. Physical and chemical organization and function in mammals, with emphasis on the human. Physiology of blood and circulation, respiration, digestion, metabolism, excretion, endocrines, sensory organs, nervous system, muscle and reproduction. Primary course for all students majoring in physiology or related sciences. Four lectures and one three-hour laboratory session per week. May be taken in any sequence. Prerequisite: college level chemistry and physics and at least junior standing.

420-6 (3,3) Principles of Pharmacology. (a) Covers absorption, distribution, and metabolism of drugs and the action of certain drug classes on the living organism. Classes of drugs to be discussed include drugs affecting the autonomic nervous system, drugs used to treat neurological and psychiatric disorders, local anesthetics, neuromuscular blocking agents, and analgesics. Two lectures per week and one two-hour laboratory. Prerequisite: 310 or 410; 410 may be taken concurrently; organic chemistry. Some knowledge of biochemistry is needed. **(b)** Involves a discussion of the physiological and biochemical action of various classes of drugs. Classes of drugs to be discussed include general anesthetics, antihistaminics, diuretics, antibiotics, drugs used to treat cardiovascular disorders and drugs affecting the endocrine system. Prerequisite: 420a; 310 or 410; organic chemistry.

430-4 (2,2) Cellular Physiology. The nature and mechanisms of function of the living cell. Chemical and physical analysis of function at the cellular level. Two lectures per week. Prerequisite: organic chemistry.

433-6 (3,3) Comparative Physiology. Variations of physiological processes in animal phyla, and comparison of these with human physiology. **(a)** Osmotic and ionic regulation; digestion, nutrition, and metabolism; excretion; respiration; defense and resistance. **(b)** Muscles and movement; circulation; nervous systems and sensory information; coverings and support; endocrine regulation; reproduction. Three lectures per week. Prerequisite: one year of biological science.

440-6 (3,3) Biophysics. (a) Biomathematics, biomechanics and biotransport. **(b)** Bioelectrics and bio-optics applied to physiological problems. Three lectures per week. Prerequisite: Mathematics 141 or equivalent; one year of college biological science including Physiology 310 or its equivalent;

one year of college physics. May be taken in b,a sequence with consent of instructor.

460-2 Electron Microscopy. Lecture course designed to introduce the student to the theory and principles of electron microscopy. Two lecture hours per week. Prerequisite: senior standing or permission of instructor.

462-3 Biomedical Instrumentation. (Same as Electrical Engineering 462.) Diagnostic and therapeutic modalities related to engineering. Cardiovascular, neural, sensory and respiratory instrumentation. Prerequisite: consent of instructor.

470-3 Biological Clocks. Study of the temporal aspects of diverse physiological and behavioral functions which possess diurnal and seasonal periodicity. Species covered will include many eukaryotic organisms including plants, but will mainly stress mammals. Oscillations in sleep-wake cycle, locomotion, reproduction, hormonal secretion and numerous other processes will be explored. In addition, the effects of biological clocks in humans and the effect of jet lag and depression will be examined. Prerequisite: 310.

500-1 to 6 (1 per semester) Advanced Seminar in Physiology. Presentation of research and current literature in physiology. Required of all graduate students in physiology. Graded *S/U* only.

501-1 Presentation of Physiological Data. Students learn to prepare and deliver oral presentations of experimental findings in physiology, to organize the talk, prepare slides, and communicate effectively. Graded *S/U* only.

510-2 Experimental Methods in Physiology. The main objectives of this course are to acquaint the student with modern laboratory equipment and principles of physiological experimentation. Prerequisite: consent of instructor.

530-3 Advanced Cellular Physiology. An advanced discussion of the following topics as they relate to the cell; release of energy, contractility, regulation and control of metabolism, electrical excitability, membrane transportation, water and organelles. Prerequisite: consent of instructor.

531-2 Advanced Cellular Physiology Laboratory. One one-hour lecture and one three-hour laboratory per week, designed to be taken concurrently with 530. Basic experimental procedures used in studies in cellular physiology.

533-4 Advanced Comparative Physiology. Advanced concepts and techniques used in current studies in comparative physiology. Three lectures and one discussion period per week.

540-3 Advanced Biophysics. Survey of recent biophysical research with emphasis on historical development of current advances. Three lectures per week. Prerequisite: 440 or its equivalent.

570-3 Advanced Physiological Topics. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years. **(a)** Biological structure, **(b)** Cardiovascular physiology, **(c)** Respiratory physiology, **(d)** Nerve-muscle physiology, **(e)** Metabo-

lism, (f) Gastrointestinal physiology, (g) Neurophysiology, (h) Radiation physiology, (i) Environmental physiology, (j) Biomathematics, (k) Biomedical computing, (l) Endocrinology, (m) Animal care, (n) Biophysics, (o) Pharmacology, (p) Special topics, (q) Reproductive physiology, (r) Renal physiology.

571-3 Research and Problems in Biological Transmission Electron Microscopy (TEM). Laboratory course designed to provide experience in techniques for biological electron microscopy. Student, with the aid of the instructor, designs and carries out a project in transmission electron microscopy. Two three-hour laboratories per week. Prerequisite: 460 or special permission of instructor.

574-3 Neuropharmacology. (Same as Pharmacology 574.) A detailed examination of the biochemical aspects of neuropharmacology with emphasis on neurotransmitters—their synthesis, storage, release and metabolism in the central and peripheral nervous system. Considerable emphasis is placed on major research developments (both past and present) that influence how one studies the action of drugs on the nervous system. Prerequisite: 410, and Chemistry 450, or equivalent.

575-3 Neuroendocrinology. Designed to investigate and discuss the current research and historical aspects of the field of neuroendocrinology. In addition, designed to have students examine and evaluate current literature in the field and through discussion have them present their anal-

ysis of the research. One hour of lecture, one hour of discussion of textual material, one hour of multiple reports on library research. Prerequisite: 410a, b or equivalent, or an undergraduate/graduate endocrinology course, or consent of instructor.

590-1 to 4 Readings or Research in Current Physiological Topics. By special arrangement with the instructor with whom the student wishes to work. Graded *S/U* only.

598-1 to 48 (1 to 12 per semester) Research. The credit hours selected for this course registration will be determined by the major professor of the student. In a typical semester no more than six hours will be taken by a student except under special circumstances. Graded *S/U* only. Prerequisite: consent of instructor.

599-1 to 6 Thesis Research. Research for thesis for master's degree.

600-1 to 32 (1 to 16 per semester) Dissertation Research. Research for dissertation for Ph.D. degree.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Plant Biology

E-mail: plant-biology@plant.siu.edu

COLLEGE OF SCIENCE

Ashby, William C., Professor, *Emeritus*, Ph.D., University of Chicago, 1950, 1960.

Bozzola, John J., Professor and *Director*, SIU Center for Electron Microscopy, Ph.D., Southern Illinois University at Carbondale, 1975; 1983. Electron microscopy; cytology; microbiology.

Crandall-Stotler, Barbara, Professor, Ph.D., University of Cincinnati, 1968; 1970. Developmental and experimental morphology; ultrastructure; phylogenesis; bryology.

Fralish, James S., Associate Professor, Ph.D., University of Wisconsin, 1970; 1969. Plant and forest community ecology; forest soil; fire ecology, presettlement vegetation.

Gibson, David J., Associate Professor, Ph.D., University of Wales, 1984; 1992. Plant population and community ecology, grassland and dune ecology, multivariate methods.

Klubeck, Brian P., Professor, Ph.D., Utah State University, 1977; 1978. Soil microbiology and biochemistry; microbial ecology.

Lightfoot, David A., Assistant Professor, (Department of Plant and Soil Science), Ph.D., University of Leeds, 1985; 1991. Biotechnology (molecular); nitrogen assimilation; genetics and development.

Matten, Lawrence C., Professor and *Chair*, Ph.D., Cornell University, 1965; 1965. Paleobotany; Devonian-Mississippian plants; evolution

of ferns, progymnosperms, and gymnosperms; early seeds; hypercard programs.

Middleton, Beth A., Associate Professor, Ph.D., Iowa State University, 1989; 1990. Wetland ecology; tropical ecology; herbivory; landscape ecology.

Mohlenbrock, Robert H., Distinguished Professor, *Emeritus*, Ph.D., Washington University, 1957; 1957.

Newsom, Lee A., Assistant Professor, Ph.D., University of Florida, 1993; 1993. Wood anatomy; palaeoethnobotany; plant domestication; tropical ecology; horticulture; natural forest management.

Nickrent, Daniel L., Associate Professor, Ph.D., Miami University (Ohio), 1984; 1990. Plant systematics and molecular evolution; biology of parasitic flowering plants.

Olah, Ladislao V., Professor, *Emeritus*, Ph.D., Stephen Tisza University, Hungary, 1934; 1959.

Pappelis, Aristotel J., Professor, Ph.D., Iowa State University, 1957; 1960. Plant physiology; quantitative interference microscopy; quantitative cytochemistry and cytofluorescence; physiology of parasitism; cellular senescence; mutagenesis (radon; agricultural chemicals).

Preece, John E., Professor, Ph.D., University of Minnesota, 1980; 1980. Woody plant biotechnology including tissue culture; genetic transformation; DNA polymorphism; biofuels.

Richardson, John A., Associate Professor, M.F.A., Ohio University, 1969; 1969. Botanical photography.

Robertson, Philip A., Professor, Ph.D., Colorado State University, 1968; 1970. Plant community ecology; dendrochronology, fire ecology.

Schmid, Walter E., Professor, Ph.D., University of Wisconsin, 1961; 1962. Plant physiology; absorption and translocation of micronutrient elements; physiology of tachyplants.

Stotler, Raymond E., Professor, Ph.D., University of Cincinnati, 1968; 1969. Bryology; systematics; botanical documentation.

Sundberg, Walter J., Professor, Ph.D., University of California at Davis, 1971; 1972. Mycology; cytology; systematics, ecology, and ultrastructure of fungi with emphasis on Basidiomycetes.

Tindall, Donald R., Professor, Ph.D., University of Louisville, 1966; 1966. Freshwater and marine phycology; algal development under natural and controlled conditions; aquatic ecology; algal toxins; natural products from algae.

Ugent, Donald, Professor, Ph.D., University of Wisconsin, 1966; 1968. Ethnobotany; taxonomy; biosystematics; phytogeography.

Verduin, Jacob, Professor, *Emeritus*, Ph.D., Iowa State University, 1947; 1964.

Yopp, John H., Professor, Ph.D., University of Louisville, 1969; 1970. Plant physiology; developmental plant physiology; environmental regulation of metabolic pathways.

Associate Faculty in Doctoral Program

Aubertin, R.	Forestry
Chong, S-K.	Plant and Soil Science
Gibson, P.	Plant and Soil Science
Kapusta, G.	Plant and Soil Science
Myers, O.	Plant and Soil Science
Olsen, F.	Plant and Soil Science
Roth, P.	Forestry
Stucky, D.J.	Plant and Soil Science
Taylor, B.H.	Plant and Soil Science
Tweedy, J.A.	Plant and Soil Science
Van Sambeek, J.	U.S. Forest Service
Varsa, E.C.	Plant and Soil Science

The Department of Plant Biology offers a well-balanced graduate program leading to the degrees of Master of Science, Master of Science in biological sciences, Master of Science in Education in biological sciences, and the Doctor of Philosophy.

The areas of emphasis are those of the broadly diversified faculty which characterizes the department and faculty members of other departments who participate in joint programs. All areas of plant biology are represented. The departmental master's programs and the doctoral program are based on a combination of course work and research. An advisory committee of faculty members from plant biology and other selected departments is responsible for the degree program of the individual student. At some stage in their overall programs, all students granted a degree will have completed training equivalent to one or more courses in each of six areas of plant biology (morphology, anatomy, taxonomy, genetics, plant physiology, and ecology).

The Department of Plant Biology is housed in modern facilities in the Life Science II building. Each faculty member provides laboratory facilities for the students as part of the research program, and the department provides centralized facilities, including a growth chamber suite, herbarium, greenhouse complex, and field stations. Several University-owned field station facilities are located in southern Illinois, and University-affiliated field programs are carried out in the British Virgin Islands. Excellent cooperative research arrangements are available with other departments for such activities as electron microscopy, chemical analyses, and research photography.

A distinguishing feature of the Department of Plant Biology is its congenial atmosphere. Individuals are encouraged to develop their own programs and research activities within the scope of available resources or those which can reasonably be attained. The first master's degree was granted in 1948, and the first Ph.D. degree in 1965. All areas of plant biology have been represented in the course of the department's history, with some shifts in emphasis according to both changing interests within the scientific disciplines and changes in the faculty and student population.

Graduate degrees in plant biology will be awarded to students in recognition of their ability to do independent research as evidenced by the acceptance of a thesis or dissertation and by the demonstration of competent scholastic ability. Teaching experience in undergraduate courses is expected as part of the Ph.D. degree program.

Admission

Students must be admitted to the Graduate School before they can be considered by the department. All applications to the department must include three letters of recommendation, application form, GRE scores including verbal, quantitative, and advanced biological, and may include a financial assistance form. Criteria for admission include grade point average, letters of recommendation, and availability of faculty, space, and facilities.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Applicants must have completed a course (or equivalent) in each of the following areas (these may be completed concurrently with work toward the degree): (a) general botany, (b) plant diversity (survey of the plant kingdom), (c) plant physiology, (d) plant taxonomy, (e) ecology, (f) genetics, (g) additional requirements for the B.A. degree as specified by the College of Science in the current Undergraduate Catalog of SIUC.

A student deficient in three or fewer of these areas (a through g) must be admitted with conditional standing. A student admitted with conditional standing must make up all deficiencies within the first academic year, and until such deficiencies are completed, no more than ten academic units can be accrued toward the degree. Students lacking four or more of these areas must register as unclassified.

All deficiencies must be made up through the taking of pertinent undergraduate or graduate courses for credit with a grade of *B* or better in each.

Students desiring financial assistance should note that the deadlines for fellowship and assistantship applications are February 1 and March 1, respectively. Application forms are available from the director of graduate studies in the Department of Plant Biology.

Accelerated Entry into the Doctoral Program

A student who enters a master's program in plant biology may, if deemed capable, be permitted to apply to be accelerated into a program leading directly to a Ph.D. degree subject to the following conditions and specifications. In order to qualify for consideration, each endorsed student must: (a) have been in the SIUC plant biology graduate program no less than one academic term when proposed, (b) have a graduate grade point average of 3.75 or better, (c) have no grade (in any course, conditional or otherwise) in the graduate record of less than *B* and (d) be deemed by the graduate faculty as having superior capabilities.

Once advanced into the doctoral program by the Graduate School, the student shall be eligible to qualify for graduate assistance totaling no more than 48 months. Once in the doctoral program, the student is subject to all of the academic, retention, and exit requirements for a regular doctoral program.

If for any reason, a student who has been admitted into the accelerated entry program fails to complete the doctoral program successfully that student shall not automatically be re-admitted into the master's program. Instead, the student may (if so desired) make formal application for admission into the master's program in plant biology subject to all considerations of qualification and evaluation.

Direct Entry into Ph.D. Degree Program

Exceptional students with a baccalaureate degree may be admitted directly to the doctoral degree program. Students admitted under this direct entry option will be expected to meet all the normal requirements of the doctoral degree, take any additional course work that may be required, and will take a comprehen-

sive/diagnostic examination during their first year in the program. The student shall be eligible to qualify for graduate assistance totaling no more than 60 months. In the event of failure of the comprehensive/diagnostic examination, the student can opt to enter the master's degree program.

Advisement

Following admission to the department and before registration for course work, the student must consult a staff member representing the field of major interest or, if this is unknown, the director of graduate studies of the department, for assistance in planning first registration. At every registration, deficiencies and specific departmental requirements must be considered first. Any changes in registration must be approved by the student's adviser.

Within the first six months of admission into the departmental program, the student must select a faculty member who is willing to serve as the major adviser. The major adviser in consultation with the student, the director of graduate studies, and the departmental executive officer will then select an advisory committee with the major adviser as chair. For the master's degree program, a minimum of three people shall make up the advisory committee. At least half of the committee must be comprised of voting members of the plant biology faculty. The advisory committee for the Ph.D. degree program will be composed of at least five people, three of which must be voting members of the plant biology faculty and one which must be from outside the department.

Following establishment of the advisory committee and before advance registration for the third term, the student will meet with the committee to discuss the program of courses for the degree and plans for research. In this regard, the committee is empowered to require work in fields with which the student's interests are allied. The advisory committee will advise the student on the selection of readings on general and historical topics of importance which may not be encountered in formal courses. Copies of the approved program of courses and the plans for research must be placed in the departmental files.

Research and Training Assignments. Research is required of each student in the program. In addition, each term the student must be engaged in a training assignment which supplements formal course work by professional activities such as research or teaching. The assignment varies according to the needs, professional goals, and competencies of the student, and increases in responsibility as the student progresses. The assignments require from ten to twenty hours of service per week.

Academic Retention

The general regulations of the Graduate School with respect to academic retention shall be followed. In addition, no course in which the grade is below *C* shall count toward the degree or fulfillment of any requirement, but the grade will be included in the grade point average. No more than five hours of *C* work in graduate courses will count toward the degree.

All students are subject to regular review by the department's graduate policies committee. Those not attaining the minimum acceptable academic standards or who in any way fail to meet any other scheduled requirements or standards will be dropped as majors.

Course Requirements

All master's degree students must earn a minimum of 2 hours credit in plant biology seminars (PLB 580 or PLB 589), at least 1 of which must be in general seminar (PLB 580). All Ph.D. students must earn 2 hours credit in plant biology seminar (PLB 580 or PLB 589) every year of residence until admitted to candidacy and at least 1 credit each year must be in general seminar (PLB 580). The

general seminar (PLB 580) will be offered once each year and all students are required to enroll in this course (the only exception will be doctoral students who are admitted to candidacy). It is strongly recommended that the student enroll in seminars dealing with subjects other than the general area of emphasis being pursued.

Those students who have not already taken a course in plant anatomy must include PLB 400-4 Plant Anatomy in their graduate degree program.

Appeals

Appeals for variations from the departmental graduate program must be presented in writing to the plant biology graduate faculty meeting as a committee of the whole. Appeals must receive approval from a majority of the total plant biology graduate faculty.

Appeals for changes in the student's graduate advisory committee or changes in the original program must be approved in the following order: (1) approval from adviser, (2) approval from remaining members of the student's advisory committee.

Student appeals for change of major adviser must be presented in writing to the plant biology graduate faculty meeting as a committee of the whole. Appeals must receive approval from a majority of the total plant biology graduate faculty.

The Master's Degree

A minimum of 30 hours of graduate credit is required beyond the bachelor's degree, including no less than 22 hours of plant biology courses, 9 of which may be individualized instruction courses, including up to 3 (minimum of 2) hours of seminar, and up to 6 (minimum of 3) hours of thesis. A graduate minor of at least 10 graduate hours may or may not be required; this is to be determined by the student and the advisory committee. At the time of completion of the thesis, the student must schedule a public presentation of the thesis material (this is in addition to the comprehensive examination).

The Ph.D. Degree

Courses. The major shall consist of a minimum of 20 semester hours at the 400 and 500 levels in formal plant biology or related courses beyond the master's degree but excludes seminar, readings, research, dissertation, and research tool requirements. The student's program must be approved by the student's advisory committee and the chair, and submitted to the director of graduate studies within the first semester of the student's program. Changes made after the first semester of the student's program must be approved by a majority of the plant biology graduate faculty.

The decision as to whether a minor shall or shall not be required shall be left to the student's advisory committee. If the committee requires a minor, it will determine the specifications of that minor.

The student shall demonstrate knowledge in two tools, one of which must be a language or statistics. A tool is defined as training in laboratory methods, instrumentation, technology, and communication skills that are integral to the pursuance of research. If a foreign language is used as a tool, the requirement may be met by passing an Educational Testing Service examination or by earning a grade of *B* or better in the appropriate 488 course or equivalent. The ETS passing level for French and German shall be 465 and the ETS passing level for Russian and Spanish shall be 440. Proficiency in statistics will be met by earning a grade of *B* or better in at least two courses totalling a minimum of six hours. Both a language and statistics will satisfy the tool requirements. However, if the student selects only a language or statistics, the remaining tool must be selected from the current list approved by the plant biology faculty. A re-

search tool to be substituted for one language or statistics must be completed utilizing formal courses consisting of at least two terms (at least 6 hours) with an average grade of *B* or better. Courses used to satisfy the requirement shall not be applied toward the total number of hours required for the degree.

Preliminary Examination. The student's advisory committee, plus two additional faculty members appointed by the chair, shall serve as the preliminary examination committee. The preliminary examination committee will be responsible for preparing, administering, and evaluating the examination which will be both written and oral.

The written examination will be taken first and will cover the candidate's knowledge of plant biology and related fields and their history, the student's accomplishments in the course of study outlined, and the student's progress in the special field. Prior to taking the examination, the student must have taken, sometime in her/his training, a second level course in each of the subdisciplines listed for the General Examination (ecology, physiology, anatomy/morphology, systematics, and genetics/cell biology). The candidates will be expected to show an understanding of the application of their formal work to their field of research. The written examination will consist of three parts: the Speciality examination which will include questions in the student's field of interest, the General Examination which will include questions testing basic knowledge in all subdisciplines in plant biology, and the Minor examination which will include questions in the student's outside minor field or secondary concentration within plant biology. The General Examination should encompass concepts and information at a level and depth consistent with the department's non-elective requirements for a bachelor's degree in plant biology. The entire written examination is to last no longer than five days and each part is to last no longer than eight hours.

The student must pass all parts of the written to proceed to the oral examination. Pass means sufficient information is evident to permit the student to proceed to the oral part of the examination. A vote to pass or fail must be taken immediately following the grading of the written examination. To pass the written examination, the vote of the preliminary examination committee will determine (by majority vote) whether the student will be allowed to continue in the program or whether the student will be required to retake part or all of the written examination. If a student fails any (subdiscipline) of the general examination, she/he must be reexamined on the failed portion. If the student fails more than one portion of the general examination, retesting on all failed portions must be taken concurrently. A student will be allowed only two attempts to pass the written examination or any part thereof. A part is defined as the 1) Specialty examination, 2) Minor Examination, and 3) the General Examination. In any event, the student must pass the written examination by the second attempt in order to continue in the doctoral program. Upon failing the written (or any part thereof), the student may not retake the exam during the same academic term.

The oral examination will be taken no sooner than ten days nor later than thirty days following the passing of the written examination. The preliminary examination should be announced at least 10 working days before the examination is to be given. The examination may only be scheduled when classes are in session, including finals week. The examination shall last at least two hours and no more than four hours and should be scheduled to allow attendance of a maximum number of the plant biology graduate faculty and all of the preliminary examination committee members. The student's answers to the written examination will be made available to the graduate faculty in plant biology (upon request) before the oral part of the preliminary examination. All attending graduate faculty members will be given the opportunity to express their opinion on the examination. A vote on performance in the oral examination must be taken im-

mediately following completion of the examination. A vote to pass must be by unanimous vote of the preliminary examination committee and may have conditions. If the vote is pass, then two levels of pass may be recognized: Pass and Pass with Distinction. A student will be allowed two attempts to pass the oral preliminary examination. Doctoral students entering the program with a master's degree must pass the preliminary examination and be admitted to candidacy by the end of 36 calendar months after first registering in the doctoral program.

Final Examination (Dissertation Defense). The final examination will be oral. The advisory committee must notify the departmental director of graduate studies of its recommendation for the date of the final examination at least two weeks before the examination. The final examination should be announced at least 10 working days before the examination is to be given and it must be held at least one month before graduation. The examination may only be scheduled when classes are in session, including finals week. The final examination shall last for no more than three hours. It is to cover the dissertation and related subject matter. Passage of the final oral examination should be construed to mean that there be no more than one dissenting vote of the advisory committee. Should a student fail this second attempt to pass the final examination, he/she will be dropped from the program.

Courses (PLB)

For all field courses in plant biology, students will be assessed a transportation fee. In addition, certain courses may require the purchase of additional materials and supplies, generally \$1 to \$5 in total cost.

400-4 Plant Anatomy. An introduction to cell division, development, and maturation of the structures of the vascular plants. Laboratory. Prerequisite: Biology 200b or consent of instructor.

404-4 The Algae. A phylogenetic approach to the study of algae with emphasis on comparative cytology, morphology and ecology. Laboratories include a detailed survey of freshwater algae and a general treatment of representative marine forms. Two lectures and two two-hour laboratories per week. Prerequisite: 204 or consent of instructor.

405-4 The Fungi. A survey of the fungi — their structure, development, relationships, ecological roles and economic importance. Two lectures and two laboratories. Prerequisite: 204 or equivalent.

406-3 Bryology. Structure, development, and relationships of the liverworts, hornworts and mosses. Two lectures and one laboratory per week. Prerequisite: 204 or equivalent.

409-3 Field Mycology. The taxonomy, ecology, and distribution of fungi in southern Illinois and environs with emphasis on techniques of specimen collection, preservation, identification and recognition. Prerequisite: Biology 200b; 204 recommended.

410-3 Taxonomy and Ecology of Bryophytes and Lichens. Floristic studies of the moss, liverwort, hornwort and lichen communities of southern Illinois. Prerequisite: Biology 200b or equivalent or consent of instructor.

414-3 Paleobotany. (Same as Geology 414) The study of external form, internal structure, and relationships of plant fossils. Two lectures and one laboratory per week. Prerequisite: 204; 400 recommended.

415-5 Morphology of Vascular Plants. The study of external form, internal structure and relationships of vascular plants. Three lectures and two laboratories per week. Prerequisite: 204. Recommended 400.

416-3 Limnology. (Same as Zoology 415) Lakes and inland waters; the organisms living in them, and the factors affecting these organisms. Two lectures per week and one four-hour laboratory alternate weeks. Offered Fall term. Prerequisite: 220a.

421-4 Botanical Microtechnique. Introduction to practical methods of preservation and preparation of plant materials for laboratory and microscopic study. Paraffin and plastic embedding and sectioning techniques, and use of general and histochemical stains stressed. Includes chromosome squashing, whole-mount preparation, photomicrography and other techniques. One lecture and three laboratories per week. Prerequisite: Biology 200b or equivalent.

425A-5 Advanced Plant Physiology. (Same as Plant and Soil Science 425a) Intermediary plant metabolism. Characterization of the photosynthetic and metabolic pathways of biosynthesis and degradation of organic constituents; role of environmental regulants of plant metabolism. Prerequisite: 320 and consent of instructor.

425B-5 Advanced Plant Physiology. Physics of plants; membrane phenomena; water relations; mineral nutrition. Prerequisite: 320 and consent of instructor.

430-3 Economic Botany. Classification, evolution, domestication, and botanical characteristics of plants useful to people. Every year. Prerequisite: Biology 200b or equivalent.

433-4 Introduction to Agricultural Biotechnology. (Same as Plant and Soil Science 433)

This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer and expression will be derived. Prerequisite: senior standing or consent of instructor.

439-2 Natural Areas and Rare and Endangered Species. Evaluation of the natural area preservation concept with emphasis on how to detect natural areas and methods to preserve them. Emphasis on the rare and endangered species program, its significance and its methodology. Prerequisite: 304, Biology 307.

440-3 Grassland Ecology. A study of grassland structure and function in relation to various biotic and abiotic factors. Cost of field trips: \$5, and textbooks must be incurred by the student. Prerequisite: 304 and Biology 307 or equivalent.

443-4 Forest Ecology and Reclamation. Soil, climatic, and genetic factors affecting tree distribution and growth in disturbed and natural habitats. Saturday field trips. Prerequisite: 307 or equivalent.

444-4 Quantitative Plant Ecology. Includes concepts and methods pertaining to the analysis of ecological data. Approaches will include quantitative methods for classifying, ordinating and describing structure of communities. Laboratory will include the computer application of these concepts and methods to field situations. Prerequisite: 360, Biology 307, or consent of instructor.

445-4 Wetland Plant Ecology. Provides students with experience in wetland plant ecology with an emphasis on wetland functioning, field sampling and identification of common wetland plants. Travel fee for field trips: \$10. Prerequisite: 304, Biology 200b, 307, or consent of instructor.

447-2 to 6 Field Studies in Latin America. Two to six weeks of intensive field work to acquaint students with the flora and vegetation in various environments of Latin America and with ecological and taxonomic field techniques. Cost varies with type of study and location. Transportation cost: \$80. Prerequisite: advanced standing in one of the biological sciences and consent of instructor.

448-3 to 8 Field Studies in the Western United States. Three to six weeks of intensive field work designed to acquaint students with the flora, vegetation and environments of the Rocky Mountains and adjacent areas. Both ecological and taxonomic field methods are emphasized. Transportation cost: \$100, travel expenses and textbooks must be incurred by the student. Prerequisite: 304, Biology 307 or equivalents, and consent of instructor.

449-4 Plant Systematics and Evolution. The principles of modern plant systematics including classification methods at different taxonomic levels, data analysis, speciation and isolating mechanisms, basic population genetics and the use of morphological, anatomical and molecular characters in assessing plant evolutionary rela-

tionships. Prerequisite: 304 or equivalent or consent of instructor.

450-2 Plant Geography. World distribution of plants related to environmental, floristic and historical factors. Prerequisite: interest in biology.

451-4 Flora of Southern Illinois. Exposure to the major upland and lowland communities of southern Illinois with an emphasis on the identification, distribution and ecology of the natural and introduced floristic components. Prerequisite: 304 or consent of instructor.

456-2 Advanced Plant Pathology. A study of the changes occurring in host and pathogen at the host-parasite interface before, during, and after penetration. Control measures will be discussed and emphasis will be on midwest field crops. Two lectures per week. Prerequisite: 356 or consent of instructor.

475-3 Advanced Cell Biology. (Same as Zoology 475.) Cell structure at molecular and cytological levels. Includes discussions of research methods, plasma membrane, cell exterior and recognition, the endomembrane system and related organelles, self-replicating organelles, the cytoskeleton, nuclear structure and function in cell replication, cell differentiation and response, and eukaryotic cell evolution. Prerequisite: Biology 306 or equivalent.

476-2 Advanced Cell Biology Laboratory. (Same as Zoology 476.) Laboratory course to accompany Plant Biology 475. Light and electron microscopy, cell culturing, biochemical methods, and experimental protocols are used to study the structure of cell membranes, intracellular organelles, including the Golgi apparatus, ER, mitochondria, plastids, lysosomes, the cytoskeleton and nucleus. Prerequisite: 475 or concurrent enrollment.

485-2 Botanical Literature. A survey of the major classical and modern writings in the botanical sciences. This includes a consideration of the primary subdivisions; systematics, structure, physiology, genetics and ecology. In addition, periodicals will be treated. Prerequisite: consent of instructor.

490-3 Photographic Methods in Scientific and Biological Photography. Black and white and color. Specimen photography, macrophotography. Slides for presentation, materials and methods used in scientific publications. Prerequisite: consent of instructor.

491-3 Scientific Illustration. Materials and methods used in illustrating scientific publications including two-dimensional graphs, maps, lettering and line drawings. Three dimensional techniques will also be covered. Prerequisite: consent of instructor.

500-3 Advanced Plant Anatomy. The study of advanced topics in the anatomy of seed plants. Emphasis is on trends in and adaptive nature of evolutionary modifications of anatomical features and the application of anatomical data to plant systematics. Two lectures and one laboratory per week. Prerequisite: 400 and 421 or equivalent.

501-4 (2,2) Research Transmission Electron Microscopy. (See Science 501a,b.)

502-4 (2,2) Research Scanning Electron Microscopy. (See Science 502a,b.)

504-3 Molecular Evolution and Systematics. (Same as Zoology 500) Survey of the theory and

processes of organic evolution at the level of protein and DNA in animals. Quantitative analysis of empirical genetic information; methods of phylogenetic inference from molecular data. Three lectures per week. Prerequisite: Zoology 404 or equivalent.

510-3 Techniques in Molecular Evolution and Systematics. Experience with current molecular techniques being employed to obtain data in systematic and evolutionary biology, specifically those dealing with macromolecules (isozymes and nucleic acids), plus exposure to phenetic and cladistic analysis of molecular data. Prerequisite: 449 or equivalent or consent of instructor.

524-2 Advanced Plant Genetics. A consideration of incompatibility systems, paramutation, cytoplasmic inheritance, developmental genetics, and other genetic topics as they occur in higher plants. Prerequisite: Biology 305 or equivalent.

525-2 to 16 (2 to 4, 2 to 4, 2 to 4, 2 to 4) Cell Biology Research Techniques. A special techniques course designed for graduate students specializing in cell studies. Provides instrumentation training, with emphasis on application of the method to a research project. (a) Quantitative Cytology. (b) Immuno-Labeling and Qualitative Histochemistry. (c) Deep Etching Techniques in Electron Microscopy. (d) Cell Fractionation and Biochemical Techniques.

526-4 Cytogenetics. A study of structure, transmission, and mutation of nuclear and cytoplasmic genetic elements, with emphasis on the utilization of structural changes in chromosomes and of changes in chromosome number in theoretical and applied genetics. Two lectures and two laboratories per week. Prerequisite: Biology 305 and 306, or equivalent.

532-3 Embryogenesis and Organography of Plants. A study of the developmental anatomy and comparative morphology of embryophytes, with emphasis on analysis of homologous versus analogous structure. In particular, the following aspects of organ development will be considered: embryological origin, cellular pattern of formation, cytochemical and histological characterization, and diversification in form. Laboratory will allow students to observe the organographic features discussed. Prerequisite: 320, 400, or consent of instructor.

533-3 Plant Growth and Morphogenesis. A study of the role of the environmental variables (light, temperature, etc.) and phytohormones in the growth and morphogenesis of intact plants and tissue cultures. The theories of plant organogenesis and the synthesis, translocation, regulation and mode of action of the major classes of phytohormones will be treated in light of the most recent literature. Three lectures per week. Prerequisite: 320 or consent of instructor.

534-2 Techniques in Studies of Plant Growth and Development. Instruction in laboratory techniques used in the study of the role of environment and natural plant growth substances in plant morphogenesis. Two two-hour laboratories per week. Prerequisite: 320 or consent of instructor.

543-2 Tree Growth. Physiological aspects of tree growth and development. Phases of the life cycle from germination to seed production will be ana-

lyzed for effects of light, temperature, moisture, nutrients, mycorrhiza, wind, air pollution and other factors. Two lectures per week. Prerequisite: 320 or 443 or Forestry 331 or equivalent.

545A-3 Landscape and Restoration Ecology Lecture. The principles of landscape and restoration ecology including patch dynamics, landscape elements and interconnections, landscape ecology study design, human interactions with natural environments and techniques in restoration ecology. Prerequisite: Biology 307 or consent of instructor.

545B-2 Landscape and Restoration Ecology Laboratory. Laboratory to learn the techniques associated with restoration ecology. One four-hour laboratory required per week. Prerequisite: 545A or concurrent enrollment.

547-3 to 8 Tropical Studies in Costa Rica. Credit for field courses taken under the jurisdiction of the Organization for Tropical Studies in Costa Rica. Courses and credits will vary. Prerequisite: approval of OTS Advisory Committee at Southern Illinois University Carbondale.

570-2 to 3 Graduate Readings in Plant Biology. A course of individually assigned readings in botanical literature. Every semester. Prerequisite: consent of instructor. Graded *S/U* only.

571-4 Agricultural Plant Molecular Biotechnology. (Same as Plant and Soil Science 570) Molecular biology is rapidly making important contributions to agricultural science through biotechnology. An appreciation of molecular biology of crop plants is important to all in agriculture and biology. The relationship between plant molecular biology and the biotechnology industry will be explored. Short independent practical projects in plant molecular biology will be pursued. Prerequisite: Plant and Soil Science 433 or 454 or 520 or 524 or Animal Science 433 or Plant Biology 425 or 433 or Microbiology 421 or Chemistry 455 or consent of instructor.

578-3 Population Genetics. (Same as Zoology 578) Genetic structure of populations, factors causing changes and principles governing rate and direction of change. Three lectures per week. Prerequisite: Biology 305 or consent of instructor.

580-1 to 6 (1 per semester) Seminar. One hour discussion of current topics in biology. Every semester. Graded *S/U* only.

589-1 to 12 (1 per topic per semester) Seminars in Plant Biology. Studies of current and historical research and literature in various topic areas of plant biology: (a) Ecology; (b) Bryology; (c) Paleobotany; (d) Anatomy; (e) Systematics; (f) Phycology; (g) Mycology; (h) Pathology; (i) Physiology; (j) Morphology. Graded *S/U* only.

590-1 to 3 Introduction to Research. General introduction to research techniques. Techniques to be determined by instructor and students. Offered every semester. Graded *S/U* only. Prerequisite: consent of instructor; consent of department for summer session only.

591-2 to 9 Research. Assignments involving research and individual problems. (a) Anatomy; (b) Bryology; (c) Ecology; (d) Morphology; (e) Mycology; (f) Paleobotany; (g) Pathology; (h) Photography; (i) Phycology; (j) Physiology; (k) Systematics. Master's students may use this for their research for their thesis. Summer only. Graded

S/U. Prerequisite: consent of instructor, consent of department.

599-2 to 9 Thesis. Course to be taken in the preparation of the Master's thesis. Every semester. Prerequisite: consent of instructor. Graded *S/U* only.

600-1 to 36 (1 to 12 per semester) Dissertation. Course to be taken in the research for and in writing of the doctoral dissertation. Every semester. Graded *S/U* only. Prerequisite: consent of instructor.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Plant and Soil Science

E-mail: psmart@siu.edu

COLLEGE OF AGRICULTURE

Chong, She-Kong, Professor, Ph.D., University of Hawaii, 1979; 1979. Soil physics.

Diesburg, Kenneth L., Assistant Professor, Ph.D., Iowa State University, 1987; 1989. Turf-grass science.

Elkins, Donald M., Professor, *Emeritus*, Ph.D., Auburn University, 1967; 1967.

Gibson, Paul T., Associate Professor, Ph.D., Iowa State University, 1981; 1989. Plant genetics and breeding and statistics.

Henry, Paul H., Assistant Professor, Ph.D., North Carolina State University, 1991; 1992. Ornamental Horticulture.

Hillyer, Irvin G., Professor, *Emeritus*, Ph.D., Michigan State University, 1956; 1956.

Jones, Joe H., Professor, Ph.D., *Emeritus*, Ohio State University, 1960; 1964.

Kapusta, George, Professor, Ph.D., Southern Illinois University at Carbondale, 1975; 1964. Weed control and crop production.

Klubek, Brian P., Professor, Ph.D., Utah State University, 1977; 1978. Soil microbiology.

Leasure, J. K., Professor, *Emeritus*, Ph.D., University of Illinois, 1953; 1966.

Lightfoot, David A., Assistant Professor, Ph.D., University of Leeds, 1984; 1991. Molecular agronomist.

McGuire, James M., Professor and *Dean of the College of Agriculture*, Ph.D., North Carolina State University, 1961; 1993. Plant pathology.

Midden, Karen L., Associate Professor, M.L.A., University of Georgia, 1983; 1988. Landscape design.

Myers, Oval, Jr., Professor, Ph.D., Cornell University, 1963; 1968. Plant genetics and breeding.

Olsen, Farrel J., Professor, Ph.D., Rutgers University, 1961; 1971. Forages and pasture agronomy.

Portz, Herbert L., Professor, *Emeritus*, Ph.D., University of Illinois, 1954; 1954.

Preece, John E., Professor, Ph.D., University of Minnesota, 1980; 1980. Horticultural physiologist.

Schmidt, Michael, Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1994; 1979. Plant breeding.

Stucky, Donald J., Professor and *Chair*, Ph.D., Purdue University, 1963; 1970. Crop physiology, crop ecology, crop production and environmental aspects.

Taylor, Bradley H., Associate Professor, Ph.D., Ohio State University, 1982; 1982. Fruit production.

Tweedy, James A., Professor, Ph.D., Michigan State University, 1966; 1966. Herbicides and weed control.

Varsa, Edward C., Associate Professor, Ph.D., Michigan State University, 1970; 1970. Soil chemistry, fertility, and management.

The Department of Plant and Soil Science offers programs of study leading to the Master of Science degree with a major in plant and soil science with concentrations in the areas of crop, soil, and horticultural sciences; an emphasis in environmental studies in agriculture is also available in each of these concentrations. Supporting courses in plant biology, microbiology, chemistry, statistics, and other areas essential to research in the student's chosen field may be selected. Supporting courses are selected on an individual basis by the student and the advisory committee. Once the general field has been selected, the research and thesis may be completed in any one of the many divisions of that field. In field crops, the research may be directed toward crop production and management, weeds and pest control, or plant breeding and genetics; in horticulture, the research and thesis may be in landscape design, vegetables, tree-fruits, small-fruits, floricultural and ornamental plants, plant tissue culture, or turf management; in soils, the research may relate to soil fertility, soil physics, soil microbiology, soil chemistry, or soil and water conservation; in environmental studies, the research may be directed toward sound pollution, water pollution,

reclamation of strip-mined soil, or agricultural chemical pollution problems. Often two of these more restricted areas can be combined in one thesis problem.

Students interested in plant and soil science at the doctoral level can be admitted to a program of study leading to the Ph.D. degree in plant biology. The program, which is administered by the Graduate School through the Department of Plant Biology, is adequately flexible to allow students to explore such interests as plant physiology, plant nutrition, chemical control of plant growth, plant genetics, etc.

Admission

Application for admission to graduate study should be directed to the department. The applicant must have the registrar of each college previously attended send an official transcript directly to the department. In addition applicants should send a letter directly to the chair of the Department of Plant and Soil Science expressing their professional and personal career objectives. Applicants should also request that four persons who can evaluate the student's academic ability write letters directly to the chair in their behalf. Final admission to the program and a particular concentration administered by the Department of Plant and Soil Science is made by the department. Minimal admission requirements to the program are: a) completion of the plant and soil science undergraduate requirements and b) a minimal grade point average of 2.7 ($A = 4.0$). The students who do not meet the requirement of completing the required courses in the undergraduate program in plant and soil science may apply to enroll as unclassified students to make up these deficiencies. Undergraduate course work taken to correct these deficiencies will not apply to the minimum requirements for the master's degree. Students entering the plant and soil science graduate program with a GPA below 2.70 are accepted on a conditional basis and must enroll in 12 hours of structured courses at the 400-500 level and make a GPA of 3.0 or be suspended from the program.

Program Requirements

If the student submits a thesis, minimum coursework requirements for the master's degree may be fulfilled by satisfactory completion of 30 semester hours of graduate credit. At least 20 hours of that credit must be from structured courses. At the 500 level 15 hours of course credit are required, of which no more than 10 hours may be from unstructured courses. Graduate seminar is required but is not a structured course. Overall, at least 15 semester hours must be from departmental courses.

If the student submits a research paper (non-thesis option) minimum coursework requirements for the master's degree may be fulfilled by satisfactory completion of 40 semester hours of graduate credit. At least 30 hours of that credit must be from structured courses. At the 500 level 18 hours of course credit are required, of which no more than 10 hours may be from unstructured courses. Graduate seminar is required but is not a structured course. Overall, at least 25 semester hours must be from departmental courses.

Each student, whether in the thesis or non-thesis option will be assigned a mutually agreed upon major professor to direct the program. The major professor will serve as chair of the student's advisory committee which will consist of at least 3 members from within the department and 1 member from another department. Each master's degree candidate must pass a comprehensive oral examination covering graduate work including the thesis or research paper.

Courses (PLSS)

Field trips are required for certain courses.

400-2 Trends in Agronomy. A discussion session format will be employed as a means of ac-

quainting students with recent literature and allowing them to remain current with latest devel-

opments in their area of specialty. Prerequisite: senior standing.

405-3 Plant Breeding. Principles of plant breeding emphasized together with their application to the practical breeding of agronomic, horticultural and forest plants. Field trip costs approximately \$10. Prerequisite: 305 or equivalent.

408-3 World Crop Production Problems. Ecological and physiological factors influencing production in various areas of the world. Natural limitations on world crop production. Non-agricultural factors influence world crop output. Prerequisite: 200.

409-3 Crop Physiology and Ecology. The effects and significance of physiological and ecological parameters on crop yields. Prerequisite: Plant Biology 320 or consent of instructor.

419-3 Forage Crop Management. Forage crop production and utilization; forage crop characteristics, breeding, and ecology; grasslands as related to animal production, soil conservation, crop rotation and land use. Field trip costs approximately \$5.00. Prerequisite: Plant Biology 200 or one course in biology or equivalent.

420-4 Crop Pest Control. Study of field pests of forest; orchard, field and garden crops; pest control principles and methods; control strategy; and consequences of pest control operations. Prerequisite: introductory biology or crop science course and/or consent of department.

422-3 Turfgrass Science. Basic concepts of physiology, growth, and nutrition of turfgrasses and their culture. Application of turfgrass science to management of special turf areas such as golf courses, athletic fields and sod farms; and to the turfgrass industry. Field trips cost approximately \$15. Prerequisite: 240 and 322 or equivalent or consent of instructor.

423-3 Greenhouse Management. Principles of greenhouse management controlling environmental factors influencing plant growth; greenhouses and related structures; and greenhouse heating and cooling systems. Field trips costing approximately \$5. Prerequisite: 220 or consent of instructor.

424-4 Floriculture. Production, timing and marketing of the major floricultural crops grown in the commercial greenhouse. Each student will have an assigned project. Field trip costing approximately \$25. Prerequisite: 423 or consent of instructor.

425A-5 Advanced Plant Physiology. (Same as Plant Biology 425A) Intermediary plant metabolism. Characterization of the photosynthetic and metabolic pathways of biosynthesis and degradation of organic constituents; role of environmental regulants of plant metabolism. Prerequisite: Plant Biology 320 and consent of instructor.

428-3 Advanced Landscape Design I. Development of the design process, graphics and verbal communication of landscape projects. Emphasis on large scale projects and residential design. Laboratory fee: \$25. Prerequisite: 328 or consent of instructor.

429-3 Advanced Landscape Design II. Development of the design process, graphics and verbal communication of landscape projects. Emphasis on construction details, color rendering and portfolio development. Laboratory fee: \$25. Prerequisite: 328 or consent of instructor.

430-4 Plant Propagation. Fundamental principles of asexual and sexual propagation of horticultural plants. Actual work with seeds, cuttings, grafts and other methods of propagation. Field trip costs approximately \$5. Lab fee: \$40. Prerequisite: 220.

432-4 Nursery Management. Principles and practices involved in the propagation, production and marketing of ornamental landscape plant materials. Emphasis on plant production with field trips to various production areas costing approximately \$40. Prerequisite: 220 and 327a, or consent of instructor.

433-4 Introduction to Agricultural Biotechnology. (Same as Animal Science 433) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer and expression will be derived. Prerequisite: Senior standing or consent of instructor.

434-3 Woody Plant Maintenance. Care and management of ornamental shrubs and trees commonly used in the landscape. Topics to include trimming, pruning, fertilization, transplanting and diagnosis of woody plant problems. Prerequisite: 327 or Forestry 202 or consent of instructor.

435-1 to 4 Agricultural Molecular Biotechnology Seminar. Molecular Biology is rapidly making important contributions to agricultural science through biotechnology. An appreciation of the techniques of molecular biology and their application to plant improvement is important to all in agriculture and biology. The relationships between plant molecular biology and the biotechnology industry will be discussed. Presentations on particular research problems will be made. Graded S/U only.

436-4 Fruit Production. Deciduous tree and small fruit growing, physiology, management practices, marketing. Prerequisite: 220 or consent of instructor.

437-4 Vegetable Production. Culture, harvesting, and marketing of vegetables; with morphological and physiological factors as they influence the crops. Field trip costing approximately \$5. Prerequisite: 220 or consent of department.

441-3 Soil Morphology and Classification. Development, characteristics, and identification of soils, study of profiles; and interpretation and utilization of soil survey information in land use planning. Field trip costing approximately \$5. Prerequisite: 240 or consent of instructor.

442-3 Soil Physics. A study of the physical properties of soils with special emphasis on soil and water relationships, soil productivity and methods of physical analysis. Prerequisite: 240.

443-3 Soil Management. The soil as a substrate for plant growth. Properties of the soil important in supplying the necessary mineral nutrients, water and oxygen and for providing an environment conducive to plant root system elaboration. Soil management techniques that are important in optimizing plant growth. Prerequisite: 240.

445-3 Irrigation Principles and Practices. This course will cover basic principles of irrigation sciences; water requirements of crops; soil water relationship; water application methods including flooding, sprinkler and drip (or trickle) systems; water conveyance, distribution and measurement; evaluation of irrigation efficiency; and irrigation scheduling. Considerations will also include crop production effects and economic aspects of irrigation. Prerequisite: 240 or consent of instructor.

446-3 Soil and Water Conservation. Covers the principles of hydrologic processes and soil erosion. Consideration will be given to the occurrence of soil erosion as it affects humans, food production and the environment. The methods and technologies for protecting against and controlling of erosion will also be discussed. Prerequisite: 240 and Mathematics 110 or 113 or consent of instructor.

447-3 Fertilizers and Soil Fertility. Recent trends in fertilizer use and the implications of soil fertility build up to sufficiency and/or toxicity levels; the behavior of fertilizer material in soils and factors important in ultimate plant uptake of the nutrients; the plant-essential elements in soils and ways of assessing their needs and additions; tailoring fertilizer for different uses and management systems; implication of excessive fertilization in our environment. Prerequisite: 240; concurrent enrollment in 448 suggested.

448-2 Soil Fertility Evaluation. A laboratory course designed to acquaint one with practical soil testing and plant analysis methods useful in evaluating soil fertility and plant needs. One hour lecture, two hours laboratory. Prerequisite: 240; 447 or concurrent enrollment; or consent of instructor.

454-4 Soil Microbiology. (Same as Microbiology 454.) A study of microbial numbers, characteristics and biochemical activities of soil microorganisms with emphasis on the transformation of organic compounds, nitrogen phosphorus, sulfur, iron and other plant essential nutrients. Lab fee \$15. Prerequisite: 240 or Microbiology 301.

468-3 Weeds — Their Control. Losses due to weeds, weed identification and distribution, methods of weed dissemination and reproduction, mechanical, biological and chemical control of weeds. State and Federal legislation pertaining to weed control herbicides. Herbicide commercialization. Field Trips costing approximately \$5. Prerequisite: an introductory biology course.

470-2 Post Harvest Handling of Horticultural Commodities. Fundamental principles of post harvest physiology, handling, and evaluation of horticultural commodities will be covered. Specific details will be given on vegetable, fruit, ornamental and floricultural commodities. Field trip costing approximately \$30. Prerequisite: 220 and Plant Biology 320.

518-3 Principles of Herbicide Action. Chemistry and mode of action of herbicides. Nature of herbicidal action. Illustrates the various types of chemical weed control procedures in current use. The physiology of herbicidal action examined using the different mechanisms established for various chemical groups of herbicides. Prerequisite: 468, Plant Biology 320.

520-3 Growth and Development of Plants. Physiological control of developmental processes. Emphasis on exogenous growth-regulating compounds and their behavior in plants. Prerequisite: Plant Biology 320 or consent of instructor.

524-2 Advanced Plant Genetics. (See Plant Biology 524.) Prerequisite: Biology 305 or equivalent.

526-4 Cytogenetics. (See Plant Biology 526.) Prerequisite: Biology 306 and 306 or equivalent.

547-2 Soil-Plant Nutrient Relationships. A study of advanced topics relating to fertilizer and nutrient use efficiency by plants, including research methods for fertilizer use evaluation and plant response. Mechanisms in the soil for nutrient storage, release, fixation and loss will be dealt with as they relate to efficient use by plants. Prerequisite: 447 or equivalent.

560-5 (3,2) Field Plot Technique. (a) Design of field plot and greenhouse experiments including appropriate statistical analyses for each of the designs. Data interpretation. Prerequisite: consent of instructor. (b) Each of the designs discussed in (a) will be illustrated with a type problem and solved by computer processes using primarily MINITAB and SAS software programs. Prerequisite: 560a or concurrent enrollment or consent of instructor.

570-4 Agricultural Plant Molecular Biotechnology. Molecular Biology is rapidly making important contributions to agricultural science through biotechnology. An appreciation of molecular biology of crop plants is important to all in agriculture and biology. The relationships between plant molecular biology and the biotechnology industry will be explored. Short independent practical projects in plant molecular biology will be pursued. Prerequisite: 433 or 454 or 524 or 520 or Animal Science 433 or Plant Biology 425 or Microbiology 421 or Chemistry 455 or consent of instructor.

581-1 to 4 (1,1,1,1) Seminar. Individual presentations on subjects and problems relating to soils, field and horticultural crops, and other phases of plant and soil science. Graded S/U only.

582-6 (2,2,2) Colloquium in Plant and Soil Science. Recent developments and trends in specialized areas of plant and soil science will be discussed in (a) Genetics and plant breeding, (b) Research methods, (c) Physiology and ecology.

588-1 to 8 International Graduate Studies. Residential graduate study programs abroad. Approval of department required both for the nature of program and number of hours of credit. Prerequisite: consent of department chair. Graded S/U only.

590-1 to 4 Readings. Contemporary books and periodicals on selected subjects within the fields of plant and soil science. Prerequisite: consent of department.

592-1 to 3 Special Problems. Directed study of specialized areas of crop production, horticulture, or soils depending on the program of the student. Discussion, seminars, readings and instruction in research techniques. Prerequisite: consent of department.

593-1 to 4 Individual Research. Directed research on approved projects investigating selected fields of plant and soil science. Prerequisite: consent of department.

599-1 to 6 Thesis. At least three hours of thesis credit is required for the master's degree under the thesis option. Prerequisite: consent of department.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the

process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Political Science

E-mail: musgrave@siu.edu

COLLEGE OF LIBERAL ARTS

Baker, John H., Associate Professor, Ph.D., Princeton University, 1961; 1966. American politics, urban politics, intergovernmental relations, local government.

Bhattacharyya, Jnanabrota, Associate Professor, Ph.D., University of Delhi, India, 1969; 1968. Political theory, international relations, public administration.

Chou, Ikua, Professor, *Emeritus*, Ph.D., Fletcher School of Law and Diplomacy, 1949; 1964.

Clinton, Robert L., Associate Professor, Ph.D., University of Texas, 1985; 1985. Public law, American politics, public choice theory.

Collins, Susan, Assistant Professor, Ph.D., Boston College, 1994; 1995. Political theory, jurisprudence.

Dale, Richard, Associate Professor, Ph.D., Princeton University, 1962; 1966. African politics, comparative politics, international politics, and civil-military politics.

Derge, David Richard, Professor, Ph.D., Northwestern University, 1955; 1972. American politics, political parties, public opinion, administrative decision-making.

Desai, Uday, Professor and *Chair*, Ph.D., University of Pittsburgh, 1973; 1978. Public administration, public policy, organizational theory.

Ervin, Osbin L., Associate Professor, Ph.D., University of Tennessee, 1974; 1974. Public administration, policy analysis, environmental and land-use policy, fiscal management.

Foster, John L., Associate Professor and *Chair*, Ph.D., University of Minnesota, 1971; 1975. Organizational behavior and theory, urban government, program evaluation, public policy.

Garner, William R., Associate Professor, Ph.D., Tulane University, 1963; 1966. Latin American politics, inter-American relations, political culture/socialization, political philosophy.

Hamman, John, Associate Professor, Ph.D., University of Illinois, 1988; 1989. Public administration, public policy, American government and politics.

Hanson, Earl Thomas, Professor, *Emeritus*, Ph.D., University of Illinois, 1948; 1960.

Hays, Scott, Assistant Professor, Ph.D., Florida State University, 1991; 1991. American government, state government, methodology.

Jackson, John S., III, Professor and *Dean*, College of Liberal Arts, Ph.D., Vanderbilt University, 1971; 1969. American government and politics, political parties, public opinion, state and local government.

Kamarasy, Egon K., Assistant Professor, *Emeritus*, Doctor Politics, Budapest University, Hungary, 1942; 1959.

Kenney, David T., Professor, *Emeritus* Ph.D., University of Illinois, 1952; 1951.

Klingberg, Frank L., Professor, *Emeritus*, Ph.D., University of Chicago, 1938; 1946.

Landecker, Manfred, Associate Professor, Ph.D., Johns Hopkins University, 1965; 1959. International relations, U.S. foreign policy, comparative politics and foreign policy, economic and political development.

Mason, Ronald M., Associate Professor, Ph.D., University of Iowa, 1976; 1976. Political theory and American politics, political participation.

McGrath, Robert A., Professor, *Emeritus*, Ph.D., University of Iowa, 1947; 1949.

McKinney, Lucinda, Assistant Professor, Ph.D., American University 1993; 1991. Public Administration, bureaucratic behavior, and methodology.

Melone, Albert, Professor, Ph.D., University of Iowa, 1972; 1979. Public law and American politics.

Miller, Roy E., Associate Professor, Ph.D., University of Illinois, 1971; 1967. Methodology, American political behavior.

Morton, Ward M., Professor, *Emeritus*, Ph.D., University of Texas, 1941; 1949.

Nelson, Randall H., Professor, *Emeritus*, Ph.D., University of Michigan, 1956; 1955.

Schubert, Glendon, Research Professor, *Emeritus*, Ph.D., Syracuse University, 1948; 1986.

Snively, Keith, Associate Professor, Ph.D., University of California at Davis, 1984; 1984. Public administration; personnel management; state, local, and urban government.

Somit, Albert, Distinguished Service Professor, *Emeritus*, Ph.D., University of Chicago, 1947; 1980.

Tarry, Scott, Assistant Professor, Ph.D., University of Michigan, 1993; 1994. International relations, political economy, comparative foreign policy, methodology.

Truitt, Lawrence, Assistant Professor, D.P.A., Arizona State University, 1992; 1991. Public administration, inter-governmental relations, aviation management.

Turley, William S., Professor, Ph.D., University of Washington, 1972; 1971. International relations, comparative politics, Southeast Asian politics.

Whitlock, Jack, Adjunct Associate Professor, *Director* of the University Museum, Ph.D., Indiana University, 1971; 1978.

The Department of Political Science endeavors to accommodate the special and general interests of students through a broad curriculum, individualized programs, and varied teaching and research assistantships. The department takes a personal interest in its students throughout their period of enrollment and assists them in finding satisfying professional employment upon graduation. Graduates now hold academic appointments in 60 American universities and colleges and more than a dozen foreign institutions of higher education. Graduates are also employed in various governmental agencies at the national, state, and local level.

The professional interests of the faculty range across all fields of political science, and have resulted in significant scholarly publications and presentations at professional meetings.

Graduate programs in the Department of Political Science may be designed to lead to Master of Arts and Doctor of Philosophy degrees with a major in political science, and a Master of Public Administration degree. Graduate work in political science may be taken to satisfy requirements for a teaching specialty for the Master of Science in Education degree with a major in either secondary education or higher education. Graduate work in political science may also serve as a cognate field for a student majoring in another discipline.

Provisions of this publication are supplemented by policies made explicit in the regulations and procedures of the graduate studies program of the Department of Political Science and made available to all graduate students.

Application Procedures

Application for admission to graduate study in political science and all post-secondary education transcripts should be directed to the department. Other application materials should be sent to the director of graduate studies, Department of Political Science. These materials consist of (1) three letters of recommendation from persons who can evaluate the applicant's academic ability; (2) a careful explanation of reasons for seeking graduate study; and (3) scores on the Graduate Record Examination (GRE) verbal and quantitative tests. Foreign students applying from abroad are not required to submit GRE scores, but are advised to do so if they are applying for financial assistance. Foreign students must have taken the test of English as a foreign language (TOEFL) and passed the examination with a score of at least 550. In exceptional cases the GRE may be waived as an admission requirement, but it must be taken at the first offering of the examination after the student enters the program. Application material, including instructions for applying for financial assistance, may be obtained from the director of graduate studies, Department of Political Science. Applications and supporting materials should be submitted at least four weeks before the term of registration. Those applying for graduate assistantships or fellowships should complete their applications by February 1.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Master of Arts Degree Requirements

Admission. Applicants for the Master of Arts degree program are admitted only with the approval of the graduate studies committee of the department. The department imposes requirements for admission in addition to those of the Graduate School. The department will ordinarily accept as candidates for the Master of Arts degree only those applicants who (1) have graduated from an accredited four year college or university; (2) have completed a minimum of 24 quarter or 16 semester hours in government or political science; (3) have a 2.7 (4-point

scale) overall grade point average or, alternatively, have a 2.9 overall grade point average for the last 2 years of undergraduate work; and (4) have a 3.0 average in government or political science.

Retention. Retention is governed by the rules of the Graduate School. Students should avoid the accumulation of incomplete grades. No student with more than 2 incomplete grades can be awarded a graduate student appointment, and a student holding a graduate student appointment is subject to having the appointment terminated upon acquiring 2 or more incomplete grades.

Course Work. The director of graduate studies serves as adviser to each M.A. student until an advisory committee has been selected by the student with the approval of the director, normally no later than the middle of the student's first semester in residence. The advisory committee must approve the student's program. The student must earn a minimum of 30 semester hours of acceptable graduate credit to qualify for the Master of Arts degree. A maximum of 12 hours can be earned in 400-level courses. A minimum of 6 semester hours must be completed in each of 3 of the following fields: political theory; methodology; American government and politics; public law; public administration and policy analysis; comparative government and politics; international relations; a cognate or interdisciplinary field. M.A. candidates must complete pro-seminars in at least 2 of the 3 areas of emphasis offered by the student for examination except in cases of cognate fields that do not stipulate pro-seminar requirements. The selection of areas of emphasis must be approved by the student's advisory committee.

The student who completes the minimum of 30 semester hours of course work may devote no more than 6 of those hours to courses taken outside of the department unless the work is in an approved cognate area. In the latter case, a maximum of 12 hours in the cognate area may be counted toward the fulfillment of area and degree requirements.

Each candidate for the Master of Arts degree must complete POLS 500. Proficiency in one research tool complementing the selected areas of emphasis is also required, i.e., statistics, data management, or foreign language. Methods of demonstrating proficiency are the same as those required of Ph.D. students. A student may count a maximum of 6 semester hours of 400- or 500-level tool course work toward partial completion of degree requirements, provided that (1) no more than 6 semester hours of an approved cognate area are counted as part of the 30 semester hours and (2) the tool courses are not counted as fulfilling one of the area requirements.

Thesis. In addition to the required course work, the student must submit a thesis. A student may receive a maximum of 6 hours credit for the thesis. Before registering for thesis credit, the student must have an overall GPA in M.A. work of at least 3.0 ($A = 4.0$) and must have completed the research tool requirement and selected a thesis committee approved by the director of graduate studies. The membership of the advisory committee and the thesis committee will normally be different from that of the advisory committee. A prospectus outlining the research proposed for the thesis must be approved by the members of the thesis committee and filed with the director of graduate studies.

A final oral examination conducted by the appropriate committee and open to the public will cover the thesis and the student's general competence in political science. A student may not take the examination if there are any incomplete grades on record except by petition to the graduate studies committee. If the student fails the examination or if the thesis is rejected, the student may be dropped from the department's degree program or may submit a new or revised thesis or repeat the examination at the discretion of the examining committee.

Copies of the thesis should be submitted to the student's thesis committee members no later than one week before the scheduled final oral examination. A copy of the approved thesis must be filed with the director of graduate studies.

Exceptions. An exception from these rules must be justified in a petition approved and signed by the student's committee members, submitted to the director of graduate studies and approved by the members of the graduate studies committee at a scheduled meeting.

Master of Public Administration Degree Requirements

Admission. Students are admitted to either pre-entry or mid-career status. To be admitted as a mid-career student, the student must have at least one year of professional experience in a public or quasi-public agency. Students having less than one year of professional experience are admitted to pre-entry status.

Applications for admission should be directed to the Graduate School and the director, Master of Public Administration degree program, Department of Political Science. To be considered for admission, applicants must have: (1) graduated from an accredited four-year college or university and (2) received an overall grade point average of 2.7 (4.0 scale) or, alternatively, a 2.9 overall grade point average for the last two years of undergraduate work. In instances where a candidate's promise is indicated by professional experience rather than undergraduate record, consideration will be given on an individual basis to admission or conditional admission. Retention is governed by the standards of the Graduate School. A GRE, GMAT, or LSAT score is required. An application fee of \$20.00 is mandatory.

Degree Requirements. M.P.A. students complete a 42 semester hour program of study, as follows: (1) a 5-course core curriculum, totaling 15 semester hours, with a minimum of 2.8 grade point average, (2) 18 semester hours of elective course work, 6 of which must be earned in graduate level courses in the Department of Political Science, (3) a research paper in public affairs, for which 3 semester hours are awarded, (4) an oral examination, and (5) an internship, for which 6 semester hours are earned. Of the 33 hours of graduate level course work, at least 18 semester hours must be taken in the Department of Political Science. Each of these requirements is described more fully below.

Prerequisites. Students lacking undergraduate preparation in American government and public administration must complete GEB 212 and POLS 340 during their first semester of study. Exceptions to this may be granted to mid-career students, on a case-by-case basis. Competence in statistics is required before enrollment in certain core courses and may be demonstrated by completion of an appropriate graduate level course, or, on occasion, by previous undergraduate course work.

The Core Curriculum. The core curriculum consists of the following five courses.
POLS 540-3 Environment of Public Administration
POLS 542-3 Public Budgeting and Fiscal Management
POLS 543-3 Public Personnel Management
POLS 544-3 Program Analysis and Evaluation
POLS 545-3 Organization Theory and Behavior

To facilitate the work of part-time (employed) students, each of the core courses is offered in the evening at least once every 3 years. A substitution for 1 core course may be allowed if the substituted course is similar in content to the particular core course or if competence in the subject matter of the course is clearly evident.

Electives. Elective courses may be selected from the offerings of various departments across the University, as well as those of the Department of Political Science. The student and the faculty adviser consult in selecting courses best suited to the student's individual career goals, which may be either specific or general in nature.

The Research Report. The research report is to be an examination of some issue or problem in public administration. It may be either theoretical or applied, or some combination of theoretical and applied concerns. Early preparation for the research project and related report begins during the student's first semester of study, and completion is normally a prerequisite for internship placement. The report is written under the supervision of the student's faculty committee.

The Oral Examination. After completion of course work and the research report, an oral examination is scheduled and conducted by the student's faculty committee. The examination gives attention to course work as well as the methodology and findings of the research report. After satisfactory performance in the oral examination, a copy of the approved research report must be filed with the Graduate School and program director. Students who fail the examination are allowed a second examination after remedial work as recommended by the committee. Candidates who fail more than once are dropped from the program.

The Internship. Pre-entry students must serve an internship in a governmental agency, unless a substitution as described below is made. The internship is usually for 4.5 months of full-time work or 9 months of half-time work, and it provides a stipend as negotiated by representatives of the program and agency. The internship is normally scheduled to begin after course work and the research report have been completed. Mid-career students receive credit for the internship on the basis of previous professional experience and submission of a paper as specified in program guidelines.

The student may substitute 6 semester hours of course work for the internship if a request is approved by the program director or if an appropriate internship is not available.

M.P.A. Aviation Administration Concentration

To be considered for admission, pre-entry applicants will need to have graduated from an accredited four year college or university with a major in some aspect of aviation, and normally have either a grade point average of 2.7 (4.0 scale) or, alternatively, a 2.9 for the last two undergraduate years. Mid-career applicants with strong professional experience may be admitted with grade point averages below these levels and with undergraduate majors outside the aviation field. Undergraduate coursework and letters of recommendation will also be considered in admission decisions.

Prerequisites in American government, public administration and statistics for aviation concentration students are the same as for other M.P.A. students. In addition, aviation concentration students lacking undergraduate preparation in aviation management must complete a basic aviation management course.

All degree requirements for the M.P.A. program also apply to the aviation administration concentration. However, students in the aviation concentration will be required to take three of the four courses in Aviation Policy and Administration and one of the five courses in Quantitative Techniques for Decision Making, listed below. This additional curriculum of four courses (12 semester hours) reduces the electives available to aviation concentration students to 6 semester hours, instead of 18 semester hours of electives available to other M.P.A. students.

Aviation Policy and Administration

POLS 551 Aviation Policy and Planning

POLS 552 Advanced Airport Administration

POLS 553 Advanced Aviation Safety Administration

POLS 554 Aviation Law and Regulation

Quantitative Techniques for Decision Making

POLS 444 Public Policy Analysis

POLS 547a Topical Seminar in Public Administration (Tools and Techniques)

BA 452 Operations Research

BA 560 Management Information Systems

BA 572 Forecasting and Decision Making Models

It is expected that students in the aviation administration concentration will write their required master's research report on an administrative issue or problem in the aviation field. Pre-entry students in the concentration would be placed only in an aviation organization for their internship.

Concurrent Degrees in Law and Public Administration

Students who have been admitted separately to the Southern Illinois University School of Law and graduate program in public affairs may study concurrently for the Juris Doctor and Master of Public Administration degrees. Students interested in concurrent study should inform both programs before entering the second academic year of either program and will register as law students with a minor in public affairs. Each program will maintain records and evaluate final degree requirements as if the student were enrolled in only one program.

Concurrent study students must complete a minimum of 81 semester hours of School of Law credits which meet all law area requirements, as well as all M.P.A. requirements to receive the J.D. degree. Students will not be permitted to take course work outside the prescribed law curriculum during the first year of law class work. Students may enroll for both law and graduate course work during subsequent years provided a minimum of 10 semester hours of law and 12 semester hours total are taken in any term which has law course enrollment.

Concurrent study students must complete a minimum of 42 semester hours which meet the distribution requirements of the M.P.A. program to receive the M.P.A. degree. A maximum of 6 semester hours of School of Law credits of a public affairs nature (for example administrative law, environmental law, labor law, natural resources law) may be applied to both J.D. and M.P.A. requirements if approved by the director of the M.P.A. program. All concurrent study students will complete either the M.P.A. internship experience and project, or the applied study project. Internships will normally be scheduled during the third or fourth year of concurrent study.

Doctor of Philosophy Degree Requirements

Admission. Applicants for the doctoral degree are admitted only with the approval of the graduate studies committee of the department. In addition to Graduate School and other departmental requirements, the committee ordinarily requires a grade point average of 3.5 (4-point scale) in graduate-level work and adequate background in political science. Admission is also possible through the accelerated entry option (see below) as well as direct entry from baccalaureate programs in those instances where the graduate studies committee identifies high achievement and potential in an applicant's undergraduate work. Applicants for direct entry should contact the director of graduate studies, Department of Political Science, for the most recent departmental regulations and procedures governing admission under this option.

Retention. Retention is governed by the rules of the Graduate School. Students should avoid accumulating incomplete grades. Students holding graduate assistant appointments are expected to make reasonable progress toward a degree. No student with more than 2 incomplete grades can be awarded a graduate assistant appointment, and a student holding a graduate assistant appointment is subject to having the appointment terminated upon acquiring two or more incomplete grades.

Accelerated Entry into the Ph.D. Degree Program. A student enrolled in the M.A. degree program may petition the graduate studies committee after 2 semesters in residence for waiver of the requirement of an M.A. degree as prerequisite for admission to the doctoral program, and for direct entry to the Ph.D. degree program in accordance with the following conditions. First, the student must be certified by the advisory committee to be an outstanding graduate student. In so doing, the committee must consider a wide range of supporting evidence including but not restricted to GPA, GRE, M.A. degree tool requirement, and evaluative letters from all graduate instructors from whom the student has taken courses. Second, the student must present 1 graduate research paper of outstanding quality or a published article of appropriate character and quality. The petition accompanied by the advisory committee recommendation and the supporting evidence must be presented to the graduate studies committee which will make the final decision on the petition. If admitted, the student will proceed toward the Ph.D. degree in accordance with the established rules of the department and Graduate School.

Direct Entry into the Ph.D. Degree Program. Students admitted under the direct entry option are required to fulfill M.A. degree method, tool, and course work requirements as part of the Ph.D. degree work. Additional measures of progress may be required by the student's advisory committee.

Program of Study. The work of a Ph.D. student is directed toward admission to candidacy for the doctorate, for which the student must meet the residency requirement, meet course, methods, and research tool requirements, maintain a GPA of at least 3.5, and pass preliminary examinations in 3 or 4 fields.

The student must be in residence for at least 1 year (2 semesters in each of which the student completes at least 9 hours or 6 hours if the student holds a graduate assistantship) after admission to the Ph.D. program before preliminary examinations can be taken. Residence shall be counted from the time the student passes the final examinations for the master's degree or, in cases of accelerated entry or direct post-baccalaureate entry to the Ph.D. degree program, when the student has met all graduate school and departmental requirements pertaining to those options.

The student's program must be approved by an advisory committee selected by the student and approved by the director of graduate studies. The members of the advisory committee should represent the student's fields.

Students prepare in 3 or 4 fields, depending on the degree of concentration they have chosen. They may take a minimum of 12 hours in a primary field, 9 hours in a secondary field, and 6 hours in each of two supporting fields. Or, they may take a minimum of 12 hours in each of 2 primary fields and 9 hours in a supporting field. Under both options, students must take a minimum of 33 hours of coursework exclusive of tool and methods requirements and pass written and oral examinations in all of their chosen fields. They also must take the appropriate pro-seminar in each of their fields; not more than 3 hours of readings or individual research may be counted for each field. The field in international studies requires two pro-seminars plus POLS 568, Research Problems in International Studies. The fields are: political theory; methodology; American govern-

ment and politics; public law; public administration and policy analysis; international studies; a cognate or interdisciplinary field.

The student must also complete the requirements for 2 research tools (see below) and the specialized research methods course best complementing the student's areas of study. The student's advisory committee may require additional course work, in or out of the areas of examination. The student, before enrolling in POLS 590, Readings or POLS 591, Individual Research, must have completed the appropriate pro-seminar for the area in which readings or individual research is to be done. At least half of all course work must be in 500-level courses.

Research Tools and Methods. The Ph.D. is a research degree, and students must acquire knowledge of research tools and methods.

1. Research tools: statistics, data management, foreign language. All Ph.D. students must satisfy a statistics requirement by successfully completing EPSY 506 and 507 or another statistics sequence approved by the graduate studies committee. Students must also satisfy one additional tool requirement. A data management tool may be satisfied by POLS 503a or b. A foreign language tool may be satisfied by a minimum score of 465 on the ETS examination or by successful completion of a 488 course in the Department of Foreign Languages and Literatures. A special examination approved by the graduate studies committee may be offered for a language not covered by ETS or the Department of Foreign Languages.

Students whose native language is not English may offer English to satisfy the additional tool requirement.

2. Methods of research.
 - a. POLS 500 is a general methodology course. It is required of M.A. students and of Ph.D. students who have not had a comparable graduate level methodology course.
 - b. Specialized methods of research. Students are required to complete successfully one specialized methods course, chosen from the POLS 501 sequence or another appropriate course, such as EPSY 508 or 531, HIST 492, PSYC 522a or b or 527, or SOC 513. The course selected should be the one most appropriate to the student's primary area of emphasis.

This department is amenable to self-tailored programs subject to the expertise of the faculty and the approval of the graduate studies committee. Such approved programs may suggest the need for tools in addition to or in place of those tools specified in this section.

Preliminary Examinations. Before preliminary examinations can be scheduled a student must have completed all course work, 2 research tools, and a specialized methodology course, have a grade point average of at least 3.5, and have had a preliminary examination committee approved by the director of graduate studies. Students may not take preliminary examinations if there are any incomplete grades on their records except by petition to the graduate studies committee.

The written preliminary examinations are to be completed within a period of 10 days; an oral examination follows within 1 week of the last written examination upon the approval of the examination committee. A student who passes the written and oral examinations is advanced to candidacy for the Ph.D. degree; a student who does not pass the examinations may be permitted to retake them at a later date or be dropped from the degree program of the department, at the discretion of the advisory committee and the graduate studies committee.

Dissertation. A dissertation must be written under the direction of and with the approval of a five member committee, one of whom must be from outside the Department of Political Science. The membership of the dissertation committee will normally be different from that of the advisory committee. A dissertation

prospectus must be approved by the members of the dissertation committee and filed with the director of graduate studies. Students must register for a minimum of 24 hours of dissertation credit, POLS 600, and cannot register for dissertation credit until they have been admitted to candidacy or, with the approval of the advisory committee and the director of graduate studies, until the term during which preliminary examinations are scheduled.

An acceptable dissertation must be completed within 5 years after admission to candidacy, or the student will have to repeat preliminary examinations. Final copies of the dissertation should be submitted to the members of the dissertation committee no later than 10 days before the scheduled oral examination. The success of a final oral examination devoted primarily to a defense of the dissertation and open to the public will complete the requirements for the Doctor of Philosophy degree. A final copy of the dissertation must be filed with the director of graduate studies.

Application of Rules and Exceptions. The department's rules in force at the time of the student's admission to the Ph.D. program will apply while the student is in the program unless (1) the student voluntarily selects a newer set of rules in toto before graduation or (2) the time between admission to the Ph.D. program and passing the preliminary examinations exceeds 5 years. In the latter case, the student will automatically come under the rules in force at the beginning of the sixth year and every fifth year thereafter until the preliminary examinations are passed.

Requests for exceptions to any of the above requirements must be presented in a petition approved and signed by the members of the student's committee, submitted to the director of graduate studies, and approved at a scheduled meeting of the graduate studies committee.

Cooperative Program with University of Illinois at Springfield

The Department of Political Science at SIUC has an agreement with the political studies program at University of Illinois at Springfield (UIS) to facilitate the entry of UIS political studies students into the SIUC political science Ph.D. degree program. SIUC will accept appropriate UIS graduate credits to fulfill course work, methodology, and research tool requirements. UIS students can qualify for accelerated entry into the SIUC doctoral program after 2 semesters of study at UIS with 24 semester hours completed, a 3.5 GPA, 2 proseminars, and written evaluations from course instructors. A number of UIS faculty are eligible to serve on graduate student examination and dissertation committees. SIUC will accept up to 12 hours credit for course work, research projects, and internships completed under UIS faculty direction towards the SIUC political science Ph.D. degree. Other course work, residency, and dissertation requirements of the SIUC program must be met as described in other sections of this catalog. For more detailed information, ask the director of graduate studies, Department of Political Science, SIUC.

Courses (POLS)

The Department of Political Science offers courses toward the Master of Arts degree and Ph.D. degree in political science and the Master of Public Affairs.

403-4 Philosophy of Politics. (See Philosophy 441.)

404-3 History of Political Theory. Shall survey different theorists and perspectives which have contributed significantly to the development of the ongoing tradition of political theory up to modern times. Prerequisite: 303 or consent of instructor.

405-3 Democratic Theory. An examination of various species and aspects of democratic thought, including the liberal tradition and its impact upon the United States. Prerequisite: 114 or consent of instructor.

408-3 Contemporary Political Theory. Shall explore the theorists and perspectives which have contributed to contemporary views of the political world. Prerequisite: 303 or consent of instructor.

413-3 Contemporary Intergovernmental Relations. An examination of relationships among national, state, and local governments in the American federal system, with emphasis on recent literature and contemporary issues. Special attention is given to fiscal relations, and specific intergovernmental programs in areas such as housing and environmental quality are examined. Prerequisite: 114.

414-3 Political Systems of the American States. The state level of government viewed with emphasis upon recent developments and current research. Prerequisite: 213.

415-3 Urban Politics. An examination of the environment, institutions, processes, and functions of government in an urban society with particular emphasis on current problems of social control and the provision of services in the cities of the U.S. Prerequisite: 213.

418-3 Political Communications. (See Speech Communication 451.)

419-4 Political Sociology. (See Sociology 475.)

420-3 Interest Group Politics. An examination of the structure, mobilization and impact of interest groups on American political life. The course objectives are to study various normative critiques of American pluralism and examine the political influence of contemporary interest groups, such as labor, racial and women's organizations. Prerequisite: 114.

433-6 (3,3) Constitutional Law. (a) This, the initial course in a two-course sequence, is concerned with the basic structure and power relationships in the American constitutional system. Topics include judicial review, judicial restraint, separation of powers, the federal system, national powers, state powers, the contract clause and substantive due process. Prerequisite: 114. Political Science 330 recommended. (b) This, the second course in the constitutional law sequence concentrates on those provisions of the U.S. Constitution which protect individual rights and liberties against government encroachment. Prerequisite: 114.

435-3 Judicial Process and Behavior. An examination of the process by which judges in both trial and appellate courts at federal and state levels are selected and of the ways in which they make decisions. Attention to the structure of the courts. Study of the communication and impact of judicial decisions. The course will provide some insight into the methods used to study judicial behavior.

436-3 Administrative Law. The procedural law of public agencies, particularly the regulatory commissions but also executive branch agencies exercising regulatory functions. The exercise of discretion and its control through internal mechanisms and judicial review. Prerequisite: 114 or 340 recommended.

437-3 Jurisprudence (Theories of Law). Major schools in legal thinking. Positive law and natural law. Idea of justice and concept of natural rights.

441-3 Administration of Bureaucratic Organizations. A study of the elements of bureaucratic organization and of problems and procedures in administration of complex public agencies. Emphasis is placed on the personnel aspects of public bureaucracy, including the history and

structure of civil service systems, conditions of public service employment and issues in leadership and supervision. Prerequisite: 340 or consent of instructor.

443-3 Public Financial Administration. An examination of governmental revenues and expenditures, with emphasis on state and local governments. Special attention is given to patterns of taxation and expenditure, intergovernmental fiscal relations, municipal debt and administrative decisionmaking. Prerequisite: 213 recommended.

444-3 Policy Analysis. An examination of basic concepts in the policy sciences, approaches to policy analysis, applications to selected areas of policy and instruments of policy development.

445-4 Administration of Environmental Quality and Natural Resources. (Same as Geography 426.) An examination of institutional arrangement and administrative practices in the protection and use of land, water, air and mineral resources. The course include analysis of responsibility and decision-making at all levels of government (federal, state, and local) as well as corporate, interest group, and individual responses to public programs. Particular attention will be given to administration of federal environmental quality legislation including the National Environmental Policy Act, the Clean Air Act, the Water Pollution Control Act and the Surface Mining Reclamation Act.

446-3 Museum Administration. A comprehensive introduction to museum administration and management, including fiscal and budget oversight; an understanding of museum ethics; acquisition, conservation and exhibition planning; personnel matters; and museum research. Museum practicum and research stressed.

447-4 to 5 (3, 1 or 2) Urban Planning. (See Geography 470a,b.)

457-3 Government and Politics of The United Kingdom and Canada. An examination of political institutions, behaviors, interest groups, parties and public policies of The United Kingdom (of Great Britain and Northern Ireland) and of Canada with particular reference to domestic and foreign policy. Prerequisite: 250 recommended.

458-3 Contemporary Europe. Comparative study of contemporary political systems and policy issues. Emphasis on selected countries and common problems facing governments. Topics covered include the European Community, security institutions, economic, social and other public policies and study of various governing processes.

459-3 Government and Politics Russia. Transitions from Communism in the former Soviet Union. Prerequisite: 250 recommended.

461-3 Governments and Politics of Southeast Asia. Politics and governments of Burma, Thailand, Malaysia, Vietnam, Cambodia, Laos, Singapore, Indonesia and the Philippines. Prerequisite: 250 recommended.

462-3 Governments and Politics of Vietnam. Origins of revolution. The war for national reunification. Impact of American involvement. Contemporary problems of consolidation and development under communist rule. Implications for regional security. Prerequisite: 250 recommended.

463-3 Government and Politics of China. Internal political, economic and social development of China. Prerequisite: 250 recommended.

464-3 Governments and Politics in the Middle East. Internal and international politics of the Islamic states of the Middle East and North Africa and Israel. Prerequisite: 250 recommended.

465-3 Governments and Politics of Sub-Saharan Africa. (Same as Black American Studies 465.) An examination of the impact of western colonial rule on the societies and politics of Africa, the methods by which these colonial areas became sovereign states in the post-World War II era, the role of domestic political institutions, African political thought and behavior, and the development of foreign policies regarding relations with other African states, continental and international organizations and non-African states. Prerequisite: 250 recommended.

466-3 Government and Politics of Latin America. An in-depth analysis of specific problem areas in Latin American political processes as well as comparative study of selected Latin American nation-states. Prerequisite: 366 recommended.

468-3 Comparative Civil-Military Politics. A comparative study of the growth of the relationship of the armed forces with the civilian sector of the body politic, the selection, training, and professionalization of the officer corps, the control of the armed forces by the executive and legislature, the growth of strategic doctrine, insurgency and counter-insurgency warfare, and the analysis of the role of the armed forces as a governing group in a large number of nonwestern states. Prerequisite: 250 recommended.

475-6 (3,3) International Law. (a) Rules and practices governing the nations in their relations in peace and war. Prerequisite: none. 270 recommended. (b) Investigation of special problems in international law. Prerequisite: 475a.

477-3 The Making of American Foreign Policy. An advanced course dealing with the formulation and administration of American foreign policy. Prerequisite: 378 for undergraduates.

480-3 International Politics. Definition and analysis of the concepts of spheres of hegemony, alliances, regionalism, integration, interdependence, and an evaluation of their application to contemporary international politics. The course will stress the need for the continuing evaluation of the vague role of national power and influence within the framework of a changing world environment.

488-3 International Relations of the Western Hemisphere. Emphasis on the international behavior of Latin American nation-states and/or regions especially related to policy trends and historical and contemporary objectives of the U.S. Prerequisite: none. 270 recommended.

500-6 (3,3) Political Science as a Discipline. (a) Scope. Topics may include problems in the philosophy of science as it pertains to political science, conceptual frameworks, approaches, models and metaphors. This course and 500b are required of all M.A. and Ph.D. students to fulfill methods requirement for degree. (b) Methods. Topics may include strategies of research design, measurement problems, data acquisition, quantitative and qualitative analysis of political data and computer applications. This course and 500a are required of all M.A. and Ph.D. students to fulfill methods requirement for degree.

501-3 to 9 (3 per topic) Research Methods. (a) Experimental and quasi-experimental research design. The role of experimental and quasi-experimental research design in political science. Specific topics discussed include the logic of experimental control, principles of research design, threats to internal and external validity, and ethical considerations in experimenting with human beings. Prerequisite: Educational Psychology 506 and 507. (b) Simulation. Analysis, design, construction, and evaluation of human, human-computer, and computer games and simulations for teaching, training and research in political science. Prerequisite: Educational Psychology 506 and 507. (c) Survey research and sampling. Basic concepts of sampling, sampling frames; types of sample design; survey designs, questionnaire construction, interviewing, coding, introductory survey analysis techniques and ethical considerations in political science. Prerequisite: Educational Psychology 506 and 507. (d) Causal modeling. Statistical techniques for the non-experimental investigation of causal systems. Logic of causal analysis, systems of simultaneous linear equations, causal modeling, path analysis and structural equation models. Prerequisite: Educational Psychology 506 and 507. (e) Theory and methods of scaling. (See Psychology 527.) (f) Theory building. Techniques of theory-building and typology construction. Probability theory; game theory; systems of differential equations; difference equation models; time series models; computer simulation models and causal models. Criteria for evaluating internal and external validity for the best theory. Prerequisite: Educational Psychology 506 and 507.

502-3 to 6 Topical Seminar in Research Methods. Advanced seminar in empirical research methods. Topics will vary with instructor. Prerequisite: consent of instructor.

503A-3 Data Preparation and Management-Mainframe. Covers the mainframe computer creation, dictionarying, cleaning and management of data files using SAS, SPSSX, BMD, OSIRIS and the IBM OS/VS utility programs. Also treats the use of the IBM Job Control Language (JCL), the Conversational Monitor System (CMS), catalogued procedures, instream procs and CMS EXEC's. A research tool course not to be counted toward graduate degree requirements.

503B-3 Data Preparation and Management-Microcomputer. Covers the micro computer creation, dictionarying, and cleaning and management of data files using SPSSPC, SASPC, or other micro packages. Also treats Disk Operating Language and procedures for moving data between micro and main frame computers. A research tool course not to be counted toward graduate degree requirements. Prerequisite: admission to political science or MPA graduate program or consent.

504-3 Pro-Seminar in Political theory. The course will survey a sampling of the best works from the broad and diverse spectrum of political theory. Normative, empirical, analytical, critical and other types of theoretical works will be analyzed. Students offering political theory as a graduate area are required to complete this course prior to enrolling in research seminars in political theory.

505-3 to 6 (3,3) Topical Seminar in Normative Theory. Topic will vary with instructor. Student should see director of graduate studies for advanced syllabus.

508-3 to 6 (3,3) Topical Seminar in Empirical Theory. Systems, structural-functional, conflict, decision-making, integration, organization, exchange, communications, democratic, totalitarian, change and revolution theories will be analyzed to determine their domain and predictive and/or explanatory capacities. Generally, half of these theories will be offered every other year. Prerequisite: consent of instructor.

510-3 Pro-Seminar in American Politics. Designed to survey the major literature in the field of American government at the graduate level. The course will synthesize and integrate the literature and give an overview of topics that will be covered in greater depth in each subject-matter research seminar. Highly recommended for new teaching assistants. Required for students offering American politics as a graduate area before enrolling in more advanced subject-matter seminars.

511-3 to 6 (3,3) Topical Seminar in American Politics. Topic will vary with instructor. Student should see director of graduate studies for advanced syllabus. Prerequisite: basic course, related training or consent of instructor.

514-3 Seminar in American State Politics. Student should see director of graduate studies for advance syllabus. Prerequisite: 414 or consent of instructor.

515-3 Seminar in Urban Politics. Student should see director of graduate studies for advance syllabus. Prerequisite: 415 or consent of instructor.

516-3 to 6 (3,3) Seminar in Political Behavior. Topic will vary with instructor. Student should see director of graduate studies for advance syllabus. Prerequisite: basic courses, related training or consent of instructor.

518-3 Seminar in Political Parties. Student should see director of graduate studies for advance syllabus. Prerequisite: basic courses, related training or consent of instructor.

521-3 Seminar in the Legislative Process. Student should see director of graduate studies for advance syllabus. Prerequisite: basic courses, related training or consent of instructor.

530-3 Pro-Seminar in Public Law. Designed to survey the major literature in the field of public law at the graduate level. The course will consider both traditional and nontraditional approaches to the subject and will acquaint students with readings and analyses covering the scope of this sub-field. Required of all students offering public law as a graduate area. Prerequisite: basic undergraduate work in the field or consent of instructor.

536-3 Seminar in Comparative Judicial Politics. An examination of judicial systems around the world including supra-national courts. Topics include the judicialization of politics, the activities of constitutional courts, the various modes of judicial selection and the political roles of legal professionals. Students may receive credit for this course in fulfillment of requirements in the sub-field of public law, comparative politics, or international studies.

538-3 Topical Seminar in Public Law. A research seminar in which students are expected to produce one or more research papers on selected topics in the public law subfield. Topics will vary with instructor. Prerequisite: basic courses in the subfield.

540-3 Environment of Public Administration. Examination of the social, political, legal and managerial constraints on the behavior of public administrators. Special attention is given to the relationship between public sector managers, on the one hand, and legislators, interest group representatives, elected executives, agency employees, clients, and the general public, on the other hand. Issues in ethics and the public's expectations of professional administrators are also examined. Prerequisite: GEB 212 and Political Science 340 or equivalent or consent of instructor.

541-3 Seminar in Applied Problems of Public Administration. Study of selected problems in public administration and policy. Emphasis placed on the practitioner's perspective. Prerequisite: 340 or consent of instructor.

542-3 Public Budgeting and Fiscal Management. An examination of the theory and practice of budgeting in the public sector and of selected elements of fiscal management. The course focuses on administrative aspects of budgeting and is oriented toward preparation of students for careers in the public service. Approaches and techniques in revenue forecasting, program planning and performance measurement are included. Students utilize primary materials in conducting individual or class projects aimed at development of budgetary skills. Prerequisite: 340 or equivalent or consent of instructor.

543-3 Public Personnel Management. A study of the processes and procedures used in contemporary public personnel systems. Emphasis is placed on examination of competing models of personnel administration, application of personnel management strategies to specific case problems and public sector labor relations. Required of all M.P.A. degree candidates. Prerequisite: consent of instructor.

544-3 Program Analysis and Evaluation. An examination of approaches and problems in the analysis and evaluation of governmental programs. Emphasis is placed upon the use of analytical techniques to determine program impact and the use of evaluation in governmental decision making. Required of all M.P.A. degree candidates. Prerequisite: graduate level statistics course or consent of instructor.

545-3 Organization Theory and Behavior. An examination of various approaches to describing and understanding public organizations and the individuals within them. Emphasis is placed on study of the important theoretical literature in the field and on the application of theory of practical management problems in governmental units and agencies. Required of all M.P.A. students. Prerequisite: consent of instructor.

547-6 (3,3) Topical Seminar in Public Administration. (a) Devoted to selected techniques and tools of public administration; (b) In-depth study of selected problems in the process and environment of public administration.

548-3 Seminar in Comparative Public Administration. Comparative study of national and

subnational public administrative politics, structures, policies and programs across nations and cultures.

549-3 Administration of Nonprofit Organizations. Examines the characteristics of nonprofit organizations that distinguish them from the public and for-profit sectors. Explores social and economic functions of nonprofits and such administrative issues as fundraising, working with volunteers and governing boards, satisfying tax codes and service distribution. Prerequisite: 340 or equivalent or consent of instructor.

550-3 Pro-Seminar in Public Administration. A survey of the major literature in the field of public administration. The course will synthesize and integrate the literature and provide an overview of topics to be covered in greater detail in other seminars. Required of M.A. and Ph.D. students offering public administration as a graduate area before enrolling in more advanced subject-matter seminars.

551-3 Aviation Policy and Planning. This course presents an examination of civil and military aviation policy and planning at the federal, state and local levels. The course will focus primarily on federal aviation policy and planning with emphasis on the substance of key aviation policies, the policy making process and the various agencies and client groups which influence these policies. The annual aviation forecast of the Federal Aviation Administration and related policies and plans will be reviewed. Each student will prepare an aviation public policy issue paper. Prerequisite: MPAA students or consent of instructor.

552-3 Advanced Airport Administration. This course will address the role and function of the airport administrator, especially related to the tasks of developing, operating and maintaining various airport services to meet the needs of key airport users. This course will study key airport administration cases at primary, commercial service, reliever and general aviation airports. Meeting key airport regulations concerning operations and security will be a focus of the course. Prerequisite: MPAA students or consent of instructor.

553-3 Advanced Aviation Safety Administration. The Aviation Safety Administrator's job function and responsibility for safety and accident prevention within an aviation organization is examined using the case study method. The relevant theory, concepts, procedures and techniques of resource allocation, organizational design, decision modeling, task assignment, delegation of authority and responsibility, establishment of organizational goals and priorities and risk management as they relate to Aviation Safety are included. The job functions of an Aircraft Accident Investigation Team and of an Aviation Safety Inspector will be studied. Aviation safety administration literature will be reviewed. Prerequisite: MPAA students or consent of instructor.

554-3 Aviation Law and Regulation. An examination of both international and domestic laws, treaties and regulations. Students study the rule-making process as it applies to aviation, the regulators, the laws and regulations and effects on the regulated. Special emphasis is given to the administration and enforcement of aviation regula-

tions. Prerequisite: MPAA students or consent of instructor.

555-3 International Aviation. An examination of the economic, legal, political and administrative milieu of international aviation. Students will study the history of the bilateral route agreements, cabotage and the legal and institutional arrangements that have evolved in international air transportation. The course will compare and contrast the domestic and international aviation policy environment. Particular attention will be placed on the emergence of international foreign ownership and marketing alliances that have been created recently, both between airlines themselves, and the dominant computer reservations systems (CRS) in existence. Other topics that will be discussed include both domestic and international labor, infrastructure and tourism development policies. Prerequisite: MPAA students or consent of instructor and 551.

556-3 Seminar in Municipal Administration. A study of the literature and recent developments in municipal administration. Emphasis is on literature and developments in areas of long-standing interest—including organization and management, state-local relations and finance and capital improvement. Prerequisite: completion of at least four of the MPA core courses, or consent of the instructor.

560-3 Pro-Seminar in Comparative Politics. Survey of the major literature in comparative politics at the graduate level. Overview of topics that may be covered in greater depth in subsequent seminars. Special attention will be devoted to conceptual and analytical problems associated with the various approaches, with emphasis on the criteria of suitable research designs. Required of all students with a Ph.D. concentration in international studies.

568-3 Research Problems in International Studies. Discussion, design and execution of research projects on non-state, sub-national, national, and supra-national actors and processes that have transnational or world systemic consequence. Required of all students with a Ph.D. concentration in international studies. Prerequisite: 560 and 570 or consent of the director of graduate studies.

569-3 to 6 (3,3) Topical Seminar in Comparative Politics. Topic will vary with instructor. Student should see director of graduate studies for advance syllabus. Prerequisite: basic courses, related training and consent of instructor.

570-3 Pro-Seminar in International Relations and Politics. Survey of the major literature in international relations and politics at the graduate level. Overview of topics that may be covered in greater depth in subsequent seminars. Special attention will be devoted to conceptual and analytical problems associated with the various approaches, with emphasis on the criteria of suitable research designs. Required of all students with a Ph.D. concentration in international studies.

573-3 Seminar in International Organization. Student should see director of graduate studies for advance syllabus.

575-3 Seminar in International Law. Student should see director of graduate studies for advance syllabus.

577-3 to 6 (3,3) Topical Seminar in Foreign Policy. Topic will vary with instructor. Student should see director of graduate studies for advance syllabus. Prerequisite: basic courses, related training or consent of instructor.

580-3 to 6 (3,3) Topical Seminar in International Relations. Topic will vary with instructor. Student should see director of graduate studies for advance syllabus. Prerequisite: basic courses, related training or consent of instructor.

590-1 to 6 Readings. Supervised readings in selected subjects. Prerequisite: completion of the appropriate pro-seminar for the field in which readings or individual research is to be done.

591-1 to 6 Individual Research. Selection, investigation and writing of a research paper under the personal supervision of a member of the department graduate staff. Prerequisite: completion of the appropriate pro-seminar for the field in which readings or individual research is to be done.

593-1 Preprofessional Seminar in Political Science. Designed to give the student an introduction to the major professional roles in the discipline. The requirements of teaching, research, publication and service are covered with discussion of where each fits into the professional role requirements and examples of how each is accomplished. Required of all Ph.D. and M.A. students in political science and other teaching assistants in political science. Graded *S/U* only.

595-1 to 6 Internship in Public Affairs. Fieldwork in the office of a governmental or quasi-governmental agency. The internship is arranged by the field coordinator of the M.P.A. degree program

and provides a stipend as negotiated by the coordinator and agency representative. A paper in which the student correlates academic knowledge with practical internship experience is required. Mid-career M.P.A. students may receive credit upon completion of a paper relating previous work experience to public administration literature and theory. Prerequisite: consent of department. Graded *S/U* only.

596-1 to 6 Research Paper in Public Affairs. Upon successful completion of core courses, the student expands and develops a previously written MPA graduate program paper. The project involves an issue or problem in public administration and is written with the approval and under the supervision of the student's committee chair. Graded *S/U* required. Prerequisite: consent of department.

599-1 to 6 Thesis. Maximum of six hours to be counted toward a degree. Prerequisite: consent of instructor.

600-1 to 36 (1 to 12 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Psychology

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COLLEGE OF LIBERAL ARTS

Berenbaum, Sheri A., Professor, Ph.D., University of California-Berkeley, 1977; 1995. Developmental neuropsychology, behavior genetics, development of sex-typed behavior, biological and social influences, statistics.

Brutten, Gene J., Professor, *Emeritus*, Ph.D., University of Illinois, 1957; 1957.

Buck, Terence D., Associate Professor, Ph.D., University of Missouri, 1968; 1969. Counseling and psychotherapy, group process and group dynamics, management of psychological services.

Chwalisz, Kathleen, Assistant Professor, Ph.D., University of Iowa, 1992; 1992. Counseling, health psychology, neuropsychology, group process and intervention, personality.

Corcoran, Kevin, Associate Professor, Ph.D., University of Connecticut, 1984; 1988. Clinical applications of social learning theory to addiction, parental adjustment to the handicapped child.

DiLalla, David, Assistant Professor, Ph.D., University of California, 1989; 1990. Personality and psychopathology, developmental, behavioral genetics.

DiLalla, Lizabeth, Assistant Professor, Ph.D., University of Virginia, 1987; 1992. Experimental developmental, behavioral genetics, social cognition.

Dillon, Ronna, Professor, Ph.D., University of California, Riverside, 1978; 1978. Experimental human psychosociology, cognitive assessment, life span, cognitive development.

Dollinger, Stephanie M. C., Associate Professor, Ph.D., Syracuse University, 1989; 1989. Lifespan development, cerebral asymmetries, aging and cognition, skilled visual processing.

Dollinger, Stephen J., Professor, Ph.D., University of Missouri, 1977; 1977. Clinical, child and family therapy, applications of attribution theory.

Ehrenfreund, David, Professor, *Emeritus*, Ph.D., State University of Iowa, 1947; 1962.

Gannon, Linda, Professor, Ph.D., University of Wisconsin, 1975; 1975. Clinical, human psychophysiology, behavioral medicine, psychosomatic disorders, learned helplessness, feminist therapy.

Gilbert, Brenda O., Associate Professor, Ph.D., University of Florida, 1985; 1986. Clinical, child behavior therapy, pediatric psychology, child behavior assessment.

Gilbert, David G., Associate Professor, Ph.D., Florida State University, 1978; 1985. Clinical, behavior therapy, marital research and therapy, behavioral medicine, smoking psychophysiology, personality, emotions.

Glidden, Cynthia, Assistant Professor, Ph.D., University of Illinois, 1991; 1990. Counseling, counselor and client attributions regarding gender role and cultural issues.

Graham, Jack W., Professor, *Emeritus*, Ph.D., Purdue University, 1951; 1951.

Guthrie, Robert V., Professor, Ph.D., U.S. International University, 1970; 1991. Experimental applied experimental, personnel, minority issued.

Hetherington, John, Assistant Professor, Ph.D., 1992, University of Arizona, Experimental, applied experimental, cognitive, environmental.

Jensen, Robert, Associate Professor, Ph.D., Northern Illinois University, 1976; 1981. Biopsychology, psychopharmacology, developmental psychology.

Kelley, Noble H., Professor, *Emeritus*, Ph.D., State University of Iowa, 1936; 1951.

Labott, Susan, Assistant Professor, Ph.D., Northern Illinois University, 1986; 1993. Clinical, human emotion, medical psychology, dissociative disorders.

Lit, Alfred, Professor, *Emeritus*, Ph.D., Columbia University, 1948; 1961.

McHose, James H., Professor and *Chair*, Ph.D., University of Iowa, 1961; 1961. Experimental, learning theory, motivation, animal learning.

McKillip, John A., Professor, Ph.D., Loyola University of Chicago, 1974; 1975. Experimental, counseling, program evaluation, need assessment, health promotion programming.

Meltzer, Donald, Professor, Ph.D., University of Pittsburgh, 1963; 1966. Experimental, learning instrumentation, psychopharmacology.

Mitchell, Thomas O., Associate Professor, *Emeritus*, Ph.D., University of Colorado, 1969; 1968.

Molfese, Dennis L., Professor, Ph.D., Pennsylvania State University, 1972; 1972. Experimental, developmental biopsychology, developmental neurolinguistics, psycholinguistics, cognition.

Molfese, Victoria J., Professor, Ph.D., Pennsylvania State University, 1974; 1972. Experimental, developmental biopsychology, cognition, aging, perinatal risk, infant behavioral and neuroelectrical assessments.

O'Donnell, James P., Associate Professor, Ph.D., University of Pittsburgh, 1965; 1965. Clinical, child psychopathology, clinical neuropsychology.

Pitz, Gordon F., Professor, Ph.D., Carnegie Institute of Technology, 1963; 1963. Experimental, decision making, cognitive processes and judgment.

Purcell, Thomas D., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1965; 1960. Personnel psychology.

Radtke, Robert C., Associate Professor, Ph.D., State University of Iowa, 1963; 1966. Experimental, memory, cognitive processes, aging.

Ramanaiah, Nerella, Professor, Ph.D., University of Oregon, 1971; 1971. Experimental, clinical personality assessment, test theory, quantitative methods.

Ringuette, Eugene L., Associate Professor, *Emeritus*, Ph.D., Purdue University, 1963; 1967.

Schill, Thomas R., Professor, Ph.D., Oklahoma State University, 1963; 1963. Clinical, personality theory and dynamics, personality evaluation, rational emotive psychotherapy.

Schmeck, Ronald R., Professor, Ph.D., Ohio University, 1969; 1969. Experimental, teaching methods, individual differences in learning, learning style, cognitive style.

Shea, Sandra, Associate Professor, Ph.D., Vanderbilt University, 1980; 1988. Experimental vision, sensation, and perception.

Shoemaker, Donald J., Professor, *Emeritus*, Ph.D., Ohio State University, 1955; 1960.

Smith, Douglas C., Associate Professor, Ph.D., Kansas State University, 1977; 1978. Experimental, biopsychology, neurophysiology, vision, development, learning and memory.

Snyder, John F., Associate Professor, Ph.D., Loyola University, 1965; 1968. Counseling, crisis intervention, consultation, supervision, rural drug abuse prevention programming, counseling evaluation research.

Stockdale, Margaret, Assistant Professor, Ph.D., Kansas State University, 1990; 1990. Experimental, industrial/organizational, gender bias in personnel decisions.

Swanson, Jane L., Associate Professor, Ph.D., University of Minnesota, 1986; 1986. Counseling, career choice and development, measurement of vocational interests, counselor training.

Tinsley, Howard E.A., Professor, Ph.D., University of Minnesota, 1971; 1973. Counseling, career counseling, psychological measurement, leisure activities, personality.

Vaux, Alan, Professor, Ph.D., Trinity College, 1979; Ph.D., University of California/Irvine, 1981; 1980. Clinical, community psychology, environmental psychology, behavioral analysis, intervention and theory, social support and stress.

Westberg, William C., Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1948; 1952.

Yanico, Barbara, Associate Professor, Ph.D., Ohio State University, 1977; 1978. Counseling, psychology of women, sex roles, counseling theories, vocational development, employee relations.

The Department of Psychology offers graduate work leading to the Master of Arts, Master of Science, and Doctor of Philosophy degrees with a major in psychology with concentrations in the following areas: experimental, clinical, and counseling psychology. The primary emphasis is on doctoral training, for which the master's degree is a prerequisite.

The goal of graduate study in the Department of Psychology at SIUC is to develop psychologists who will have a broad perspective and scientific sophistication as well as the requisite skills to advance the field of psychology and meet changing needs. The program emphasizes formal course work in the core cur-

riculum and in the concentrations, preprofessional activities in training assignments, research, and practicum opportunities.

Admission and Advisement

Separate application forms must be submitted to the Department of Psychology and to the Graduate School. Graduate School and departmental application forms may be obtained from the Department of Psychology. Separate forms are not required for application for financial assistance, except for Graduate School fellowships. Students will be accepted for graduate work in psychology only upon approval by the departmental admissions committee as well as the Graduate School. Evaluations of applicants by the departmental admissions committee are based on information from the application form, GRE scores, transcripts, and letters of recommendation.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Upon admission to the department, each student is assigned to a faculty adviser, who assists in academic matters, including the planning of the student's program of study: required courses, planned electives, anticipated dates for fulfillment of specified requirements, etc.

A new adviser may be assigned to a student for 2 reasons: (a) the student or adviser may request a change of adviser; (b) the student may change to a different major area. Requests for a change of adviser should be made in writing to the student's major area committee. To change majors, the student should petition the area subcommittee of the new major.

Core Curriculum

All students must complete the following minimum requirements which may be supplemented by requirements specific to concentration areas.

1. two of three courses from 522, 524, and Educational Psychology 507.
2. 509 for students who have not completed a course in the history and systems of psychology.
3. thesis (599) registration; students enrolled in the master's degree program should complete the thesis requirement (599, 4-6 hours) by the end of the second year.
4. one course from each of the four core coverage areas specified by the American Psychological Association. A list of course which meet core coverage requirements is maintained by the department.

Areas of Concentration

EXPERIMENTAL PSYCHOLOGY CONCENTRATION

The experimental psychology program provides students with thorough training in theory and research methods applicable to the study of behavior. The program is designed to provide a variety of career paths for research and teaching in academic and nonacademic settings. The student emphasizes 1 of the 3 areas of experimental psychology: applied experimental psychology; biopsychology of learning and memory; and life span developmental psychology. In addition to general departmental requirements, students in experimental psychology take a course in computer programming and must register for research credit (593, 594a, 599, or 600) during all but the first 2 semesters of residence.

Students in applied experimental psychology take the following courses: 523, 524, 569, 571, two additional courses in research methodology, and an additional course computer use. PSYC 571 should be taken during the first semester in residence, and 569 during the second, third, and fourth years. Students in the biopsychology of learning and memory take 510, 511, 514, and courses in animal

models of human memory and neuroanatomy. Students take 3 additional courses or seminars relevant to their interests in the biological bases of behavior and/or learning and memory. Students in life span development take 551, 554, either 514 or 515, and 5 additional approved courses or seminars presenting the biological, cognitive and perceptual aspects of human development. The additional course work must emphasize at least 2 of the major developmental periods: infancy/childhood, adolescence, and adulthood/old age.

CLINICAL PSYCHOLOGY CONCENTRATION

The clinical psychology program, approved by the Education and Training Board of the American Psychological Association, is designed to develop clinical psychologists for careers in clinical service, teaching, and research. All clinical students take the core of courses and receive early and continued practicum training in both clinical activities and research. Individual interests are accommodated through electives and training assignments and through specialty programs. The following courses are required of all clinical students: 432, 523, 530a and b, 531, 535, 540, 586, 594e, 598.

In addition to the clinical core students take a minimum of 6 additional courses in their emphasis: (1) general clinical students are required to take an assessment practicum and an additional semester of therapy practicum plus 4 electives; (2) the experimental clinical students are expected in their 6 additional courses to take those which have a research orientation, e.g., 532, 533, 539, etc.; in addition, except when enrolled for thesis or dissertation hours, the student is expected to be involved in research each term after the first year; (3) students in the child clinical emphasis are required to take 556 plus 5 electives. In addition it is expected that they will take 552 and 554 as a part of departmental electives.

COUNSELING PSYCHOLOGY CONCENTRATION

The counseling psychology program, approved by the Education and Training Board of the American Psychological Association, is designed to teach students a wide range of skills which will prepare them to function as scientist-practitioners. Graduates are qualified for employment in a university setting (either in an academic department or a counseling center), in hospitals, community agencies, and educational and correctional institutions. The student is expected to develop competence in counseling, psychological assessment, consultation, research, and teaching. The required courses are as follows: 523, 526, 530, 536, 538, 540a, 547, 548, 553, 558, 594f, and 598.

Research, Practicum, and Training Assignments

Research or practica are required in each area of concentration. In addition, each term the student must be engaged in a training assignment which supplements formal course work by professional activities such as research, teaching, or clinical service. The assignment varies according to the needs, professional goals, and competencies of the student, and increases in responsibility as the student progresses. The assignments require from 10 to 20 hours of service per week. This is a degree requirement of all students each term and is independent of any financial support. Therefore, each term the student signs up for one hour of 597.

Master's Degree Requirements

The master's degree requires a minimum of 48 semester hours of acceptable graduate credit, distributed according to the requirements of the student's major area, and the completion of an approved thesis. The master's thesis may be either original research or the replication of an important study. The master's degree is a prerequisite for the doctorate.

Doctoral Requirements

Admission. Admission to the Ph.D. program requires a master's degree, a grade point average of 3.25 or above in graduate studies, and acceptance by the department. A student who receives the master's degree from SIUC must apply formally to the Graduate School for admission to doctoral-level study, and must be approved by the faculty.

Records of students entering the program with a master's degree from another institution are evaluated by the departmental admissions committee which notes deficiencies, recommends methods for removing them, and specifies a time limit to do so. Such deficiencies must be removed before the student can be classified as a Ph.D. candidate. The student is recommended to the graduate dean for admission to Ph.D. candidacy only when core curriculum requirements and the preliminary examination(s) have been satisfactorily completed.

Accelerated Entry into Ph.D. Degree Program. Students enrolled in the M.A. degree program may be admitted directly to the Ph.D. degree program following departmental certification of graduate work comparable to a master's degree in psychology at SIUC. Accelerated entry is acceptable only for students who have completed substantial work in other programs in psychology which grant the Ph.D. degree but not a master's degree. Students seeking accelerated entry may apply after enrollment at the master's level for one semester. Applications for accelerated entry are reviewed and decided by a faculty committee appointed by the department chair.

Internship. Doctoral students who are concentrating in counseling or clinical psychology must complete an APA-approved internship. The internship is viewed as an integral part of training and the Ph.D. degree is not awarded until the completion of all academic work and the internship. Students are responsible for scheduling and obtaining internships. Internships in counseling and clinical psychology require a full-time experience either for one calendar year, or for two years of half-time experience. Counseling and clinical students are approved for internship after completion of their master's degree, major and minor preliminary examinations, and all courses required for the Ph.D.

Students in applied experimental psychology are encouraged to complete an internship in an applied setting away from campus that is selected with the help of their faculty advisers in their major area of concentration.

Preliminary Examinations. Ph.D. candidacy is contingent upon successful completion of a written preliminary examination in the student's major area of concentration. The examination is composed primarily of essay questions requiring substantive knowledge of empirical and theoretical topics. Questions are not limited to course content.

Every student is expected to pass each examination on first taking. In any event a second failure on a preliminary examination will result in a thorough faculty review of the student's entire academic record in order to determine whether the student will be allowed to continue in the program and, if continued, under what conditions.

Major/Comprehensive. Fields of concentration for the major/comprehensive preliminary examination are listed below:

1. Experimental. Any one field from the following may be selected for the comprehensive examination: applied experimental, biopsychology of learning and memory, life-span developmental.
2. Clinical. The major examination includes the following: psychological assessment, psychotherapy, psychopathology, and personality. In addition for

the student, the examination reflects the specialization emphasis, i.e., general, child, or experimental.

3. Counseling. The major examination includes the following areas: (a) adult personal, social, and career development, (b) assessment, (c) group and individual counseling theories and techniques, (d) research methodology and measurement, and professional issues.

Major/comprehensive examinations are scheduled by the department once a term, ordinarily within the first 2 weeks. Notices are posted well in advance and students are expected to notify the graduate secretary of their intention to take the examination. Examination committees are appointed by the chair.

Minor/Specialization. In addition to the major/comprehensive preliminary examination, a minor/specialization preliminary examination may be required or optional in the student's concentration area.

Dissertation. Each candidate for the Ph.D. degree must write a dissertation showing high attainment in independent, original scholarship and creative effort. A total of 24 semester hours is required. A maximum of 8 hours of dissertation credit may be taken subsequent to passing the minor preliminary examination and prior to passing the major preliminary examination. A student may not hold a prospectus meeting before successful completion of both minor and major examinations.

Thesis and Dissertation Committee

Because the thesis or dissertation project and the proposed committee composition must be formally approved by the department chair, the student should arrange a meeting with the chair well in advance of the prospectus meeting.

A master's thesis committee consists of 3 members including the chair of the committee and a psychology faculty member who is typically from some field other than the student's major area of interest. The Ph.D. dissertation committee consists of 5 members, 1 of whom serves as chair. One of the members must be from a department other than psychology.

Prospectus. Prior to starting the experimental research on a thesis or dissertation, a student must submit a written prospectus to each member of the committee. A carefully written prospectus ordinarily serves as the opening chapters of the thesis or dissertation. The student also prepares an abstract (normally no more than 2 pages) to be posted in the psychology department office one week before the prospectus meeting.

The approval of the prospectus indicates that the committee members accept the research design. Faculty members not on the committee may attend the prospectus meeting, or may forward suggestions and comments to the committee chair prior to the meeting. Prospectus meetings are not scheduled during the recess period between semesters.

If the prospectus is approved with no major modifications, one copy of the prospectus and a letter of approval, noting any minor modifications are sent by the committee chair to the department chair for filing in the student's permanent records. If major modifications are needed, the student may be asked to rewrite the prospectus, circulate the revised prospectus, arrange another committee meeting, and then file the revised prospectus as above. A prospectus must be approved at least one semester before graduation.

Style. The student has the option of writing the thesis or dissertation in the traditional fashion or in journal style. In the latter case, ancillary material (full survey of literature, subsidiary analyses, etc.) are placed in the appendices, although figures and tables appear in the text. The psychology department prefers

that citations, table headings, etc. follow the APA style (*Publication Manual of the American Psychological Association*, 1983 revision, Washington, D.C.).

General Procedures. Students should not register for 599 or 600 hours until they have supervisors and will actually be using university facilities, or faculty time for assistance and direction.

Prior to graduation (a minimum of 5 weeks for master's students and 8 weeks for doctoral students) the candidate must submit a final rough draft of the thesis or dissertation to the full committee so that appropriate suggestions can be made. At least one week usually expires between the submission of the rough draft and the oral examination.

Number of Copies. Four copies of the complete thesis or dissertation are required: two copies are submitted to the Graduate School for placement in the University library, and two bound copies—one for the committee chair, and one for the departmental thesis and dissertation library.

Oral Examination

The Department of Psychology requires an oral examination, conducted by the student's thesis or dissertation committee, for each M.A. and Ph.D. candidate. The examination covers the thesis or dissertation and also includes questions designed to ascertain the student's general competence in psychology.

Oral examinations are open to all interested observers. Notices of the time and place of the examination, and abstracts of the thesis or dissertation, are circulated throughout the department and, in the case of Ph.D. examinations, throughout the University. Two copies of the abstract should be given to the graduate program secretary.

The candidate obtains copies of the oral examination form and the thesis or dissertation evaluation form from the graduate program secretary, and delivers them to the committee members on the day of the orals. Orals meetings are not scheduled during the recess period between semesters.

General Information

Waiving of Course Requirements. Students who wish to have a course waived should consult with their advisers, the course instructor, and the head of their major area. One of the following recommendations will be made: (a) the course will be waived; (b) a proficiency examination (theoretical, practical, or both) will be given prior to deciding on the student's request; (c) the request will be refused and the student will take the course. A student may appeal the decision by writing a letter to the department chair requesting that the case be reviewed.

Grading Policies. Any student who receives a grade of *Inc.* is responsible for contacting the instructor to determine the time allowed for the completion of the course (normally not more than one year).

For internal records to be used within the department only, pluses and minuses are added to the standard A, B, C grades reported to the Office of Admissions and Records.

Student Evaluation. All students are evaluated by the faculty at least once a year, normally during fall semester. New students are evaluated in the beginning of spring semester (first year) and students on departmental probation at times specified in their probation. The evaluation is based on the following criteria: (1) academic performance on a ten point rating scale ($A^+ = 10$); (2) ratings on the training assignment; and (3) progress toward the degree. The student's evaluation may also be based upon evidence relating to professional attitudes or ethical behavior.

Each student's adviser informs the student of the evaluation and of any faculty recommendations as soon as possible after the meeting. In addition, the department chair writes a formal letter notifying the student of the evaluation and recommendations.

Courses (PSYC)

407-3 Theoretical Issues in Learning. An introduction to the major theoretical issues in learning and their importance. A brief review of the history of such problems will be followed by a summary of the current research concerning these issues. Traditional figures in learning theory will be considered within the context of their positions on specific questions. Prerequisite: 211 and 309 or equivalent, or graduate status.

409-3 History and Systems of Psychology. A review of the conceptual and empirical antecedents of modern psychology. Prerequisite: 211 and senior status or graduate status.

411-3 Principles of Training. An in-depth coverage of practical problems concerned with training to which the principles of learning derived from pure laboratory investigations can be applied. Prerequisite: 211 and 309, or graduate status.

413-3 Individual Differences. Reviews the reliable and theoretically significant individual and group differences that have been revealed by research in the behavioral sciences. Examines differences in general intelligence, specific verbal and spatial abilities, stylistic and personality characteristics, as well as such group differences as sex, race and socioeconomic status. Prerequisite: 211 and 305, or graduate status.

415-4 Psychopharmacology. A survey of the effects of drugs on the normal and abnormal behavior of humans and animals. A primary focus is upon understanding drug influences on behavior in relation to actions on the nervous and endocrine systems. Prerequisite: 211 and 302 or graduate status.

416-3 Recovery of Function Following Brain Damage. A survey of experimental animal and human clinical research as they relate to behavioral recovery following damage in the central nervous system. Recent theories and literature are stressed. Prerequisite: 211 and 302, or graduate status, or consent of instructor.

419-3 Behavior and Heredity. Provides an overview of the experimental and quantitative methods used in studying behavioral differences associated with genetic variables. Elementary aspects of genetics will be included in the course, which will examine several aspects of both human and nonhuman behavior. Prerequisite: 211 or consent of instructor, or graduate status. Zoology 214, Biology 305 or equivalent recommended.

420-3 Advanced Industrial and Organizational Psychology. Advanced examination of topics in industrial and organizational psychology focusing more heavily than Psychology 320 on applications of psychology to human resource management, such as job analysis, performance appraisal systems, personnel selection and training. In addition to exams covering content, students are required to apply knowledge and skills learned on individual and group projects. Prerequisite: 211.

421-3 Psychological Tests and Measurements. Introduction to test theory and test development. Detailed coverage of selected tests from such areas as intelligence, aptitude and personality. Prerequisite: 211 or graduate status.

431-3 Psychopathology. A comprehensive overview of major psychological problems, including emotional, personality, psychotic and developmental disorders. Problems will be described in terms of their principal features, and research and theory will be reviewed. Strategies of assessment, the utility and limitations of diagnostic systems, alternative views of abnormality and clinical research methods will be examined. Prerequisite: 211 and 305, consent of instructor or graduate status.

432-3 Psychopathology of Childhood. An extensive review and systematic evaluation of theories and research pertaining to the behavior disorders of childhood. Emphasis will be upon empirical data and the implications of these data for the classification and treatment of these disorders. Prerequisite: 211 and 301 or graduate status.

440-3 Theories of Personality. A review and evaluation of major personality theories and their supporting evidence. Prerequisite: 211 and 305 or graduate status or consent of instructor.

441-3 Helping Skills in Clinical and Counseling Psychology. Provides systematic training in helping skills for students considering clinical or counseling psychology as a career. Students learn to identify and demonstrate such individual skills as encouragement, paraphrasing, and reflection of feeling, and will use them in practice situations. Students will also learn to apply various approaches to psychotherapy and counseling using hypothetical case studies. The course is complementary to 340. Prerequisite: 211 and 340 or graduate status or consent of instructor.

445-4 Psycholinguistics. (Same as Linguistics 445.) A broad spectrum introduction to psycholinguistics. Topics to be covered include general methodology for the study of psycholinguistics, the nature of language, theories of human communication, language comprehension and production, first and second language acquisition, meaning and thought, natural animal communication systems, and language and the brain. Prerequisite: 211.

451-3 Advanced Child Psychology. An assessment of concepts, methods and research techniques within selected topic areas of developmental psychology. Prerequisite: 211 and 301 or graduate status or consent of instructor.

461-3 Advanced Social Psychology. Critical examination of contemporary theories and research in social psychology. Practice in application of scientific findings to real-life problems of individuals and groups. Issues treated in depth are chosen for relevance to student's personal needs and career interests. Prerequisite: 211 and

307 or graduate status. Not for psychology graduate students.

463-3 Attitudes and Persuasion. An examination of theory and research regarding the formation of attitudes, the modification of attitudes, and the techniques for measuring attitudes. Prerequisite: 211 and 307 or graduate status.

464-4 Social Factors in Personality and Adjustment. (Same as Sociology 426) Review of selected theoretical orientations and research traditions in social psychology. Comparison of different theoretical and methodological approaches: symbolic interaction, role theory, developmental and social psychology, theories of attitude organization and change, studies of belief and value systems, theories of socialization. Prerequisite: 211 and 307.

465-3 Needs Assessment Techniques for Mental Health Planning. Surveys methodological techniques for assessing the need for mental health services including developing a resource inventory, use of census and other social indicator data, rates under treatments, community and consumer surveys, hearing and site visits. Attention is also paid to method of presenting results of need assessments to lay boards. Prerequisite: 211 and senior standing in psychology or graduate status or consent of instructor.

489-1 to 12 Seminar: Selected Topics. Varied content. Offered as need exists and as faculty interests and time permit. Prerequisite: 211 and consent of instructor.

503-3 Individual Differences. Reviews the reliable and theoretically significant individual and group difference that have been revealed by research in the behavioral sciences. Examines differences in general intelligence, specific verbal and spatial abilities, stylistic and personality characteristics, as well as such group differences as sex, race and socioeconomic status. Prerequisite: graduate status in Psychology.

509-3 History and Systems of Psychology. A review of conceptual and empirical antecedents of modern psychology. Students research and summarize topics on 20th Century systematic developments. Prerequisite: graduate status in Psychology.

510-3 Learning Processes. Reviews current literature in various areas of learning. Coverage is limited to those topics which are subject to laboratory investigation and which do not involve verbal processes.

511-3 Human Learning and Memory. Survey of the current experimental theoretical literature on human learning and memory with primary emphasis on verbal learning and memory. Prerequisite: consent of instructor.

512-4 Sensory Processes. A study of the structure and functions of the sense organs. Emphasizes the psychological data which describe the function of these organs. Lecture and laboratory. Prerequisite: consent of instructor.

513-3 Human Psychophysiology. Physiology, instrumentation, and methodology of psychophysiological measurements including both autonomic and central nervous systems. Attention will be given to basic and applied research. Prerequisite: graduate standing.

514-4 Neurobiological Bases of Behavior. An advanced study of neuroanatomical and neuro-

physiological principles underlying behavior. Topics covered include structure and function of neurons, synaptic transmission, sensory processing, motor control, development and plasticity of the nervous system and other current topics in neurobiology. Prerequisite: 302 or equivalent and consent of instructor.

515-3 Theory and Research in Cognitive Psychology. A detailed survey of current studies of attention, short-term memory and thought processes. Prerequisite: consent of instructor.

516-3 Human Clinical Neuroanatomy. Basic functioning of the nervous system, detailed gross anatomy and dissection of the human brain, functional disorders following brain damage, noninvasive cranial nerve examination. Prerequisite: graduate standing.

517-3 Aging, Memory and Cognition. A detailed survey of current methodology, research and theory dealing with cognitive and memory processes in later adulthood. Topics covered include attention, memory, reasoning and problem solving, language processing and inference and age-associated pathologies affecting cognition and memory. Prerequisite: consent of instructor.

518-4 Psychopharmacology and Behavior. A detailed survey of the effects of drugs on the normal and abnormal behaviors of human and animals. A primary focus is upon understanding drug influences on behavior in relation to actions on the nervous system, endocrine system and behavior pathology. Students review and summarize original research in the area. Prerequisite: graduate status in psychology or permission of instructor.

519-3 Research on Individual Difference. Reviews the reliable and theoretically significant individual and group differences that have been revealed by research in the behavioral sciences. Examines difference in general intelligence, specific verbal and spatial abilities, stylistic and personality characteristics, as well as such group differences as gender, race and socioeconomic status. Students review and summarize original research in the area and lecture on that topic. Prerequisite: graduate status in psychology or permission of instructor.

520-3 Applications of the Psychology of Learning and Memory. A survey of the theories and methods of training that have resulted from research in the areas of learning and memory. Students will review some of the very recent methods as well as those that are better developed. Practice will be provided. Prerequisite: 309 or consent of instructor.

522-4 Experimental Design and Analysis. In-depth coverage of the rationale underlying the design and analysis of complex experimental designs used in psychological research. Prerequisite: psychology graduate student or consent of instructor.

523-3 Research Methods in Applied & Professional Psychology. Discussion of problems of experimental and quasi-experimental design, control and analysis that are encountered by researchers in applied and professional psychology. The course covers critical evaluation of internal, construct, and external validity and the application of randomized and non-randomized designs for causal inference. Passive-observational and

qualitative designs are covered at the instructor's discretion. Examples of current research practice from applied, counseling and clinical psychology are reviewed. Prerequisite: graduate status in psychology or consent of instructor.

524-3 Multivariate Methods of Psychology. Detailed treatment of multiple-factor analysis and multiple regression analysis. Also includes introduction to other multivariate methods such as discriminant analysis and cluster analysis. Prerequisite: 522b and Psychology graduate status.

525-3 Mental Test Theory. Intensive coverage of such topics in test theory as item analysis, reliability, validity, problems of weighting in differential prediction, and problems in selection and classification. Prerequisite: 421 or consent of instructor.

526-3 Research in Counseling Psychology. This course provides a basic foundation of research skills. The course includes extensive reading in counseling psychology research and coverage of research design, specific research techniques, technical writing and research ethics.

527-3 Theory and Methods of Scaling. The theory of measurement, by which observed behavioral events can be translated into quantitative scales of psychological constructs. The course will cover several axiom systems that form the foundation for psychological measurement, including representation in more than one dimension. Prerequisite: 522b.

528-3 Decision Analysis: Techniques for Aiding Decisions. A survey of formal methods for making decisions, based on subjective probability and multiattribute utility assessments. Students will be given practice in using methods of decision analysis for solving decision problems. Prerequisite: 522a or consent of instructor.

530-3 Theories of Counseling and Psychotherapy. A survey of the major theories of personality and systems of counseling and psychotherapy. Stresses relationship between theory and application. Prerequisite: consent of instructor.

531-3 to 6 Community and Institutional Field Placement. Introduction to a variety of area agencies with each student affiliating with two agencies at least two days per week. Individual and group supervision with special attention to the variety of clinically related problems and approaches to treatment encountered in the course of their activities. Required for clinical students. Prerequisite: 530b, psychology graduate in clinical or counseling.

532-2 Experimental Approaches to Personality. Presentation of conceptual formulations and research data from representative experimental approaches to personality. Students will be expected to carry out a research project during the course. Prerequisite: 530a or consent of instructor.

533-2 Experimental Approaches to Psychopathology. An examination of the research literature on several issues in clinical psychopathology. Prerequisite: psychology graduate or consent of instructor.

534-3 Principles of Behavior Therapy. (Same as Rehabilitation 554.) A presentation of the clinical techniques and research findings associated

with the various behavior therapies (including desensitization, assertive training, modeling, operant techniques, aversive conditioning, "cognitive" behavior therapy). Prerequisite: graduate standing in the Psychology Department (clinical/counseling) or consent of instructor.

535-3 Psychopathology. Surveys the following issues and content areas in psychopathology: models and definitions of psychopathology, anxiety states, depression, schizophrenia, neurosis, behavior genetics, the mental hospital and the classification of psychopathology. This course required for all clinical students within their first two years. Prerequisite: psychology graduate student or consent of instructor.

536-4 Fundamentals of Counseling. An introduction to counseling psychology as a professional specialty. Professional and ethical issues in the training and work of counseling psychologists are examined. Basic counseling skills are acquired through practice interviewing. Prerequisite: psychology graduate student or consent of instructor.

538-3 Theory and Practice of Group Facilitation. Didactic presentation of group dynamics and group counseling/therapy. Theories coordinated with facilitation of Psychology 101 groups. Prerequisite: graduate status.

539-3 Experimental Approaches to Psychotherapy. A review and evaluation of empirical research related to the amelioration of maladjustment. Emphasis is on measurement and methodological problems. Prerequisite: 530 or consent of instructor.

540-7(4,3) Psychological Assessment. Basic theory, practice, underlying assumptions and research data on psychological assessment. (a) Objective psychological assessment. Methods include intelligence testing, objective personality scales, interviews and observations. Includes one hour laboratory section. (b) Projective psychological assessment. Methods include the Rorschach Inkblot technique and Thematic Apperception Test. Prerequisite: psychology graduate status.

542-3 Principles and Problems in Personality Assessment. Critical review of research related to such topics as scale construction strategies, response styles, trait attribution, judgmental accuracy, and judgmental processes. Prerequisite: consent of instructor.

543-3 Advanced Child Assessment. Basic theory, research, and practice in the psychological assessment of children's learning and emotional problems. Prerequisite: 540a, consent of instructor and psychology graduate standing.

544-3 Advanced Adult Assessment. Practical experience at conceptualizing psychopathology from a standard clinical test battery and in writing clinically meaningful test reports. Prerequisite: 540a, 540b, consent of instructor and Psychology graduate standing.

545-3 Introduction to Neuropsychological Assessment. Overview of the development of neuropsychology from signs to test batteries and methodology. Prerequisite: 540a, consent of instructor and psychology graduate status.

546-3 Human Clinical Neuropsychology. This course will familiarize students with the basic concepts, empirical foundations, and clinical applications of human clinical neuropsychology. The neurobehavioral manifestations of both acute and

chronic conditions will be covered. Prerequisite: 540a, psychology graduate status and consent of instructor.

547-3 Fundamentals of Psychological Measurement. Examination of the fundamental principles and concepts of psychological measurement, including theories of personality and ability structure, test construction and standardization procedures, and conceptions of reliability and validity. Prerequisite: 421 or consent of instructor.

548-3 Vocational Psychology and Career Development. Introduces students to vocational psychology as an area of academic inquiry. The topics covered include theories of career development, occupational information, computer applications, research issues, and vocational counseling techniques. Prerequisite: 547 or consent of instructor.

549-3 Behavioral Assessment. A didactic and practicum course concerned with principles and methods of behavioral assessment including behavioral interviewing, questionnaires, self-monitoring, naturalistic and structured observation and psychophysiological assessment.

550-3 The Psychological Construction of Gender. (See Women's Studies 550).

551-3 Advanced Developmental Psychology I. Studies current research trends in experimental child psychology: an introduction to methods and theory, the biological bases of development, infancy, cognition, perceptual development and language. Prerequisite: consent of instructor.

552-3 Advanced Developmental Psychology II. Consideration of current methods, research, and theory in developmental psychology with particular attention to social and personality development, and parent-child relations. Prerequisite: consent of instructor.

553-3 Cross-Cultural Psychology. Examines different topics in areas such as psychopathology, social and developmental psychology from a cross-cultural perspective. Prerequisite: consent of instructor.

554-3 Developmental Theories. An analysis of contemporary theories of development and related research as they are derived from major historical theories of development. Prerequisite: 551 and consent of instructor.

555-3 Language and Cognition. Current theoretical problems in language and cognitive developments are investigated from the perspective of psychology, physiology, linguistics and computer simulations. Prerequisite: consent of instructor.

556-3 Child Psychotherapy. Survey and analysis of traditional and contemporary approaches to individual child psychotherapy. Includes psychodynamic, humanistic-nondirective, hypnotherapy-imagery and other perspectives as well as therapy outcome research. Prerequisite: consent of instructor and psychology graduate status.

557-3 Family Psychotherapy. Investigation of the psychosocial interior of the family. Evolution and dynamics of interaction in families. Study of the methods of therapeutic intervention with families. Prerequisite: consent of instructor and psychology graduate status.

558-3 Personality and Social Development of Adults. A lecture-discussion course which presents the major theoretical and empirical literature in the area of adult personality and social

development. Students are encouraged to apply normal developmental constructs to understand individual adults, as well as to gain competence in research methods in this area. Prerequisite: psychology graduate student or consent of instructor.

559-3 Behavioral Child Therapy. Survey and analysis of behavioral and cognitive-behavioral approaches to the treatment of child psychopathology. Prerequisite: consent of instructor and psychology graduate status.

563-3 Research in Attitudes and Persuasion. Detailed review of current theory and research in social psychology of attitude formation and change and of persuasion techniques. Students will develop literature reviews and conduct original research. Prerequisite: graduate status in psychology or consent of instructor.

564-3 Program Evaluation: Experimental and Quasi-Experimental Approaches. Review of experimental and quasi-experimental designs for assessment of program impact. Discussion of design, logistic, and political implementation problems. Detailed examination of a number of attempts at program evaluation. Prerequisite: 500-level statistics course.

565-3 Research in Organizational Psychology. In depth examination of theoretical and research literature in organizational psychology. Topics include, but are not limited to, theory and research literature on work motivation, job attitudes, leadership, group processes, organizational stress and women and minorities in the work place. Prerequisite: graduate status in psychology or permission of instructor.

567-3 Stress, Coping and Social Support. Overview of theory and research on stress, coping and social support. Emphasis is on psychosocial approaches to the stress process including life events, hassles, work stress, and family stress. Social support also is examined, both as a moderator of stress effects and as a valuable resource in its own right.

568-3 Community Psychology. Comprehensive overview of community theory, research, and action. Topics covered include: (1) paradigmatic assumptions of the community approach to psychosocial problems; (2) basic concepts, models and issues including prevention, paraprofessionals, systems theory, and social context; (3) social intervention strategies; and (4) examination of selected contemporary psychosocial problems. Prerequisite: psychology graduate status or consent of instructor.

569-1 to 3 Applied Research Consultants. Consulting firm which provides applied research experiences for advanced graduate students on planning, data gathering, evaluation, and decision making projects for units of university and area agencies and businesses. Students exercise decision making power in all aspects of the firm: project solicitation, fee setting, expenditures. Graded S/U only. Prerequisite: 571 or consent of instructor.

571-6 (2,2,2) Proseminar in Applied Experimental Psychology. A survey of the problem areas to which applied experimental psychology is applicable and of the principal methods employed by applied experimental psychologists. Integration of these approaches within a comprehensive

metatheory. Case studies apply the information to actual and simulated application problems.

576-3 Human Engineering. Analysis of human-machine systems, human factors in the design of display and control systems, limitations and capabilities of the operator. Lecture and research or field study. Prerequisite: consent of instructor.

585-1 to 18 Advanced Seminar. Seminars of varied content for advanced students. Prerequisite: consent of instructor.

586-1 Clinical Research Seminar. Required seminar for students enrolled in the Clinical Psychology program. Prerequisite: Psychology graduate status and classified status in Clinical Program.

590-1 to 12 Readings in Psychology. Readings in selected topics in psychology under staff supervision. Graded *S/U* only. Prerequisite: consent of instructor.

593-1 to 24 Research in Psychology. Research under staff supervision in selected areas of psychology. Graded *S/U* only. Prerequisite: consent of instructor.

594-1 to 16 Practicum in Psychology. Practicum experience in a professional setting is offered under staff supervision in the following areas: (a) Applied experimental psychology; (c) Clinical skills. Introduction to the professional skills and issues of clinical psychology including ethics, interviewing, change processes, diversity issues. (f) Counseling psychology; (i) Teaching of psychology. Graded *S/U* only. Prerequisite: consent of instructor.

595-1 to 12 Internship. Placement in an approved setting required of all students in clinical, bio-clinical, and counseling psychology. Graded *S/U* only. Prerequisite: psychology graduate student.

596-3 Behavior Therapy Practicum. Practicum experiences with a variety of behavior therapies in a variety of settings. Experiences may include operant and nonoperant therapies in the clinic, school, institution, home or community. Prerequisite: 534, 549.

597-1 to 15 Preprofessional Training. Experience given in research, teaching, or clinical or counseling activities. One hour required each semester of residence. Graded *S/U* only. Prerequisite: psychology graduate student.

598-3 Ethical and Professional Problems in Psychology. The code of ethics in professional practice, in teaching and research; problems and issues of the field are discussed; and relations to other professions and the public are considered. Prerequisite: consent of instructor.

599-1 to 6 Thesis.

600-1 to 24 Dissertation.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Public Administration

E-mail: mpaprog@siu.edu

(See Political Science for program description.)

Radio-Television

E-mail: telecom@siu.edu

(See Telecommunications for program description.)

Recreation

E-mail: ge1840@siucvmb.siu.edu

COLLEGE OF EDUCATION

Glover, James M., Associate Professor, Ph.D., University of Maryland, 1980; 1989. Outdoor recreation, wilderness preservation, historical research, environmental related research, wilderness leadership.

Glover, Regina B., Associate Professor and Chair, Ph.D., University of Maryland, 1983; 1983. Leisure service administration, leadership personnel, communication, marketing, politics.

Malkin, Marjorie J., Associate Professor, Ed.D., University of Georgia, 1986; 1989. Therapeutic recreation, aging, substance abuse, curriculum development.

McEwen, Douglas N., Professor, Ph.D., Michigan State University, 1973; 1975. Recreation philosophy and history, outdoor recreation resource

management, nature interpretation, ecology, campground management, risk in recreation.

O'Brien, William, Professor, *Emeritus*, Re.D., Indiana University, 1967; 1948.

O'Dell, Irma, Assistant Professor, Ph.D., University of New Mexico, 1992; 1995. Administration, programming, management, leadership, community satisfaction/life satisfaction, youth at risk, rural recreation.

Taylor, Loren, Professor, *Emeritus*, Ed.D., Columbia University, 1957; 1957.

Teaff, Joseph D., Professor, Ed.D., Columbia University, 1973; 1980. Therapeutic recreation, community recreation for special populations, recreation in corrections, leisure services with the elderly, administration of therapeutic recreation, research methods.

The Department of Health Education and Recreation offers a broad interdisciplinary program of studies preparing students for administrative careers in recreation management. The program leads to the Master of Science in Education degree with a major in recreation. A non-refundable application fee of \$20.00 must be submitted with the application. (The application can be obtained from the department.) Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Master of Science in Education Degree

Graduate work in recreation stresses administration and research and is open only to highly qualified students. All students must be admitted to the Graduate School in good standing.

The graduate students in recreation must complete a common core of courses required of all students pursuing the master's degree in recreation. Included in this core are the thesis requirements and Guidance 506 (Inferential Statistics). After the completion of the core, the student may select 17 hours of electives of which 6 hours must be approved graduate courses in recreation. By utilizing the electives the student can emphasize a specific option or emphasis to pursue. This emphasis may include recreation administration, focusing on skills necessary for management of local, state, and federal recreation programs both in the public and commercial sector; outdoor recreation resource management which focuses on skills necessary to manage or administer programs, facilities and lands in the local, state, and federal park system; therapeutic recreation which focuses on skills necessary in the management of public and private organizations which provide a diverse array of therapeutic recreation services (this emphasis leads to certification). Variations of these include campus recreation management, expedition leadership, and facility management can also be pursued by the student.

The major requires a minimum of 36 semester hours of course work including 3 hours of thesis, 3 hours of research methods, and 4 hours of inferential statistics. A student must maintain an overall 3.0 (4 point scale) grade point average in order to be eligible for a recommendation to graduate. Upon completion of the required research course a student should select a chairperson for the thesis supervisor committee as soon as is practicable. A minimum of two additional graduate faculty members, one holding rank outside the faculty of recreation, are needed to form the full committee. More than three graduate faculty members will be appointed if necessary. After approval of a thesis topic the student will conduct a research effort under the committee's guidance. Upon completion of the research a final oral examination covering the thesis is required.

Major in Recreation

The core requirement for the degree is listed below.

MANAGEMENT OF RECREATION SERVICES

Theory Core

REC 500-3 Principles of Recreation

REC 501-3 Personnel in Leisure Services

REC 508-3 Trends and Global Issues in Leisure Services

Research Methodology Core

REC 550-3 Research in Recreation

Research Core

GUID 506-4 Inferential Statistics

REC 599-3 Thesis

Total core hours: 19

Elective hours: 17

Total hours required: 36

Courses (REC)

Courses in this major may require the purchase of supplemental materials. Field trips are required for certain courses.

401-3 Fundamentals of Environmental Education. (Same as Agriculture 401.)

423-3 Environmental Interpretation. (Same as Agriculture and Forestry 423.)

425-3 Planning and Design of Recreational Facilities. An examination of major design considerations for a variety of recreation facilities such as recreation centers, recreation sport complexes, parks, visitors centers, and natatoriums. Special attention will be given to long range facility planning. Prerequisite: senior or graduate standing.

431-3 Expedition Leadership. Course focuses on professional leadership of highly adventurous wilderness trips. Emphasis is on development of sound judgment, decision-making, and teaching in wilderness expeditions. Three-to five-week expeditions in a wilderness setting. Trip fee not to exceed \$500. Outdoor Leader certification by Wilderness Education Association is offered.

440-15 (3 per topic) Therapeutic Recreation for Selected Populations. Students will be made aware of problems and characteristics of special population groups. Emphasis is upon the role of therapeutic recreation with these groups in institutional and community settings: (a) Therapeutic Recreation for the Mentally Ill. (b) Therapeutic Recreation for the Developmentally Disabled. (c) Therapeutic Recreation for the Aged. (d) Therapeutic Recreation for the Socially Deviant. (e) Therapeutic Recreation for the Physically Disabled. Prerequisite: 300, 302, 304 or consent of department.

445-3 Outdoor Recreation Management. Philosophy and principles underlying the growth and development of outdoor recreation management. Outdoor recreation is examined in terms of historical values, long range planning, site design, visitor needs and environment impact. A laboratory cost of up to \$14 may be required. Prerequisite: 300, 302, 303 or consent of department.

460-3 Therapeutic Recreation Management. Organization and administration of therapeutic recreation programs in hospitals, nursing homes, schools for the retarded, detention centers, prisons and other institutions. Financial management and reimbursement issues are stressed. Prerequisite: 300, 302, 304 or consent of department.

461-3 Program Design and Evaluation for Therapeutic Recreation. To equip the student with skills necessary to systematically design and evaluate programs. Philosophy and nature of systems, system analysis, assessment, individual treatment planning, implementation and evaluation of treatment programs. Prerequisite: 300, 302, 304, one section of 440, concurrent enrollment in 380, or consent of department.

462-3 Facilitation Techniques in Therapeutic Recreation. This course is designed to provide an understanding of the basic processes and techniques of therapeutic recreation and to develop technical competencies necessary for the

provision of quality therapeutic recreation services. Emphasis is on the skillful application of various processes and techniques to facilitate therapeutic changes in the client and the client's environment. Prerequisite: 304 or concurrent enrollment.

465-3 Advanced Administrative Techniques. Designed to examine current administrative topics in recreation such as practices and trends in budget and finance, legal aspects, grant writing, personnel practices and policies and others. Prerequisite: 365, 380.

475-3 to 39 (3 per topic) Recreation Workshop. Critical examination and analysis of innovative programs and practices in one of the following areas: (a) Budget and finance, (b) Campus recreation services, (c) Commercial, (d) Maintenance of areas and facilities, (e) Outdoor recreation, (f) Personnel, (g) Technological advances, (h) Therapeutic recreation-aging, (i) Therapeutic recreation-developmental disability, (j) Therapeutic recreation-emotional illness, (k) Therapeutic recreation-physical disability, (l) Therapeutic recreation-prisons and detention centers, (m) Tourism.

485-2 to 12 Practicum in Outdoor Education. A supervised experience in a professional setting. Emphasis on administrative, supervisory, teaching and program leadership in outdoor, conservation, or environmental education setting. Costs for travel are the responsibility of the student. Prerequisite: consent of instructor.

500-3 Modern Concepts of Leisure. This course explores the meaning of leisure, recreation, and play from a philosophical and psychological perspective. The historical and contemporary relationships among work, time, lifestyles and leisure are analyzed. In addition, the course attempts to develop students' viewpoints toward these topics in order that they formulate a philosophy of leisure. Required of all majors.

501-3 Personnel in Leisure Services. This course will examine administrative issues regarding personnel in leisure delivery systems. Topics include: leadership theory, selection and training, legislation, collective bargaining, motivation, performance appraisal, power and gender. Prerequisite: 365.

502-3 Revenue Production for Leisure Service Organizations. An integrative view of revenue production for leisure service organizations. Numerous practices of generating income, such as fees and charges, facility rental, bonds, investments and public/private cooperative development will be examined in relationship to their ability to aid an organization in achieving its stated objectives. Prerequisite: 365.

503-3 Managing and Marketing Leisure Services. An examination of the critical functions of a manager in public and private leisure service organizations. Particular topics include goal and policy development, ethics, risk management, fiscal management and facility opera-

tions. Special attention is given to the leisure service managers role in marketing recreation. Prerequisite: 365.

508-3 Trends and Global Issues in Leisure Services. This course will study the various issues and trends that affect leisure delivery systems. This course will be the culminating seminar for graduate students in Recreation. Prerequisite: 500, 501, 502, 550.

524-3 Professional Skills in Therapeutic Recreation. This course focuses on professional skills necessary at the administrative and supervisory level. Program and staff development, conference presentations, and inservice training, grantsmanship, article writing, budgeting, consultation and public relations comprise the core of the course. Prerequisite: 304, 460 or consent of department.

525-3 Recreation for Special Populations. Planning, organizing, selecting, evaluating, and adapting activities to a variety of institutional and community settings. Prerequisite: 500 or consent of department.

526-3 Seminar in Current Issues in Therapeutic Recreation. This course focuses on current issues in therapeutic recreation services including credentialing, accreditation, professional associations, legislation, research and other relevant issues. Prerequisite: 304 or consent of department.

550-3 Research in Recreation. Critical analysis of the most significant research studies in park and community, special populations, commercial and outdoor recreation. Prerequisite: 500.

560-9 (3 per topic) Seminar in Recreation. Major issues, trends, and cultural, economic and social significance in (a) Park and community, (b) Therapeutic recreation and individuals with dis-

abilities, and (c) Commercial recreation. Prerequisite: 500 or consent of department.

565-3 Seminar in Environmental and Outdoor Education. Discussion of individual projects, presentation of research problems and dissertation topics. Prerequisite: consent of instructor.

575-1 to 6 Individual Research. Selecting, investigating, and writing of a research topic under the personal supervision of a member of the department. Designed to help the student to develop ability to design, conduct, analyze and interpret research related to the problem of leisure. Not more than three hours may count toward Master's degree. Prerequisite: consent of instructor.

580-1 to 6 Readings in Leisure and Recreation. Readings in selected topics in leisure and recreation under staff supervision. Not more than three hours may count toward master's degree. Prerequisite: consent of instructor.

596-1 to 6 Field Work in Recreation. Field work in an approved recreation department. Field work is in the student's field of interest. Supervision under approved agency officer in charge and a member of the department. Prerequisite: major in recreation and permission of the department.

599-1 to 3 Thesis. Prerequisite: consent of department.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Rehabilitation Institute

E-mail: rehab@siu.edu

COLLEGE OF EDUCATION

Allen, Harry A., Professor, Ed.D., University of Arkansas, 1971; 1970. Mental illness, psychosocial aspects of physical disabilities, counseling, death, and dying.

Anderson, John O., Professor, *Emeritus*, Ph.D., Ohio State University 1950; 1950.

Austin, Gary F., Professor and *Chair/Director*, Ph.D., Northwestern University, 1973; 1984. Deafness rehabilitation; psychosocial aspects of disability.

Beck, Richard J., Assistant Professor, Ph.D., University of Wisconsin, 1987; 1990. Chronic pain, substance abuse, workers' compensation, and cross-cultural counseling.

Bender, Eleanor, Assistant Professor, *Emerita*, M.S., Southern Illinois University at Carbondale, 1972; 1961.

Benshoff, John J., Associate Professor, Ph.D., University of Northern Colorado, 1987; 1988. Rehabilitation administration, private sector rehabilitation, substance abuse.

Blache, Stephen E., Professor, Ph.D., Ohio State University, 1970; 1971. Phonology, distinc-

tive feature theory, experimental phonetics, research design.

Bordieri, James E., Professor, Ph.D., Illinois Institute of Technology, 1980; 1986. Vocational evaluation, rehabilitation administration, job placement, rehabilitation management.

Brackett, Isaac P., Professor, *Emeritus*, Ph.D., Northwestern University, 1947; 1951.

Brutten, Gene J., Professor, *Emeritus*, Ph.D., University of Illinois, 1957; 1957.

Bryson, Seymour L., Professor, Ph.D., Southern Illinois University at Carbondale, 1972; 1969. Social, economic, and culturally different clients.

Crimando, William, Professor, Ph.D., Michigan State University, 1980; 1980. Job development and placement, computers in rehabilitation, adjustment services, staff training and development.

Cuvo, Anthony J., Professor, Ph.D., University of Connecticut, 1973; 1973. Behavior analysis and intervention in developmental disabilities, evaluation research, legal and ethical issues.

- Davis, Paula K.**, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1989; 1995. Developmental disabilities, behavior analysis, transition from school to adult life.
- Dickey, Thomas W.**, Associate Professor, *Emeritus*, M.A., Southern Illinois University at Carbondale, 1964; 1964.
- Falvo, Donna**, Professor, Ph.D., Southern Illinois University at Carbondale, 1978; 1974. Maintenance and support of the disabled.
- Garbutt, Cameron W.**, Associate Professor, *Emeritus*, Ph.D., Louisiana State University, 1951; 1947.
- Gardner, Margaret S.**, Associate Professor, *Emerita*, Ph.D., Northwestern University, 1960; 1968.
- Greene, Brandon**, Professor, Ph.D., Florida State University, 1979; 1979. Behavior analysis in consumer affairs; parent and staff training.
- Hoshiko, Michael S.**, Professor, *Emeritus*, Ph.D., Purdue University, 1957; 1957.
- Janikowski, Timothy P.**, Associate Professor, Ph.D., University of Wisconsin-Madison, 1988; 1988. Assessment, credentialing, private for-profit rehabilitation, computers in rehabilitation.
- Koepp-Baker, Herbert**, Professor, *Emeritus*, Ph.D., University of Iowa, 1938; 1961.
- Lehr, Robert P., Jr.**, Professor, Ph.D., Baylor University, 1971; 1973. Neuroanatomy, medical problems of speech.
- McCabe-Smith, Linda**, Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1994; 1994. Language development/language disorders in children, multicultural populations, assessment of language in children.
- Moncur, John P.**, Professor, *Emeritus*, Ph.D., Stanford University, 1950; 1972.
- Poppen, Roger L.**, Professor, Ph.D., Stanford University, 1968; 1970. Stress reduction, relaxation, biofeedback, human operant conditioning.
- Renzaglia, Guy A.**, Professor, *Emeritus*, Ph.D., University of Minnesota, 1952; 1955.
- Riggat, Theodore**, Professor, Ed.D., University of Northern Colorado, 1977; 1979. Rehabilitation administration, professional burnout.
- Rubin, Harris B.**, Professor, Ph.D., University of Chicago, 1965; 1966. Sexual behavior, applied behavior analysis, treatment of incarcerated offenders, and prison reform.
- Rubin, Stanford E.**, Professor, Ed.D., University of Illinois, 1968; 1980. Rehabilitation research, case management, history and philosophy of rehabilitation.
- Ruder, Kenneth F.**, Professor, Ph.D., University of Florida, 1969; 1984. Psycholinguistics-child language and language intervention.
- Schultz, Martin C.**, Professor, Ph.D., University of Iowa, 1955; 1986. Audiology, methodology.
- Schumacher, Brockman**, Professor, *Emeritus*, Ph.D., Washington University, 1969; 1967.
- Simpson, Kenneth O.**, Assistant Professor, Ph.D., University of Nebraska-Lincoln, 1995; 1994. Alternative/augmentative communication, motor speech disorders.
- Taylor, Darrell**, Assistant Professor, Ph.D., University of South Florida, 1992. Vocational evaluation and work adjustment, cognate rehabilitation counseling.
- Vieceli, Louis**, Associate Professor, *Emeritus*, M.S.Ed., Southern Illinois University at Carbondale, 1959; 1958.
- Wright, W. Russell**, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1974; 1971. Design and conduct of survey research and selected analysis.

In response to pressing human and social needs, the applied field of rehabilitation has solidly entrenched itself as a professional discipline. Multidisciplinary courses of study have been drawn together from the behavioral, social, and medical sciences appropriate to the development of competent practitioners, supervisors, and programmers in rehabilitation and welfare agencies. The overall program is left purposely broad and flexible to permit the inclusion of training innovations and emerging career patterns.

The Rehabilitation Institute offers graduate programs leading to the Doctor of Rehabilitation degree and to the Master of Science degree with majors in behavior analysis and therapy, rehabilitation administration and services, and rehabilitation counseling.

A non-refundable application fee of \$20.00 must be submitted with the application. (The Application can be obtained from the department). Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

The Master's Degree Program

The master's degree programs in rehabilitation administration and services, behavior analysis and therapy are 45 semester hour programs and rehabilitation counseling is 48 semester hours. Candidates have the option of a research paper or a thesis. Candidates concentrating primarily on preparation for entry into the helping profession ordinarily opt to complete a research paper in their area of concentration. The thesis option typically requires a thesis of an experimental

nature, a survey, or other form of research in which empirical data are collected and analyzed. Candidates must demonstrate their skills in formulating researchable questions or hypotheses, in identifying and/or manipulating relevant variables, and in the analysis and reporting of the results.

BEHAVIOR ANALYSIS AND THERAPY

The behavior analysis and therapy program is devoted to the empirically-based development and application of learning principles to a wide variety of human needs. Training is offered in behavioral practice, research and theory as it applies to problems such as child abuse and neglect, developmental disabilities, chronic medical conditions, and traumatic head injury.

Degree Requirements

In fulfilling the 45 semester hour requirement, the student must complete the required courses or their equivalent, at least two elective courses from those listed below, at least one 3-hour practicum, an internship, and either a research paper or thesis.

REQUIRED COURSES

REHB 503 Basic Behavior Analysis
REHB 508 Complex Behavior Analysis
REHB 509a Scientific Methods: Single-Subject Designs
REHB 509b Scientific Methods: Group Designs
REHB 512 Legal and Ethical Issues in Behavior Analysis
REHB 535 Behavioral Observation Methods
REHB 574 Staff Training and Development
REHB 594b Practicum in Behavior Analysis and Therapy

ELECTIVE COURSES

REHB 515 Behavioral Applications to Medical Problems
REHB 543 Child Behavior
REHB 545 Behavior Analysis in Developmental Disabilities
REHB 553 Learning Therapies for Special Populations
REHB 557a Self-Regulation of Behavior: Self-control
REHB 557b Self-Regulation of Behavior: Biofeedback
REHB 563 Behavioral Analysis: Community Applications
REHB 564 School-Related Behavior
REHB 568 Sexual Behavior and Rehabilitation
REHB 584 Seminar in Behavior Analysis and Therapy
REHB 589 Professional Seminar in Rehabilitation

Internship

The student must complete satisfactorily 9 hours of REHB 595 (Internship in Rehabilitation) under the supervision of a behavior analysis and therapy faculty member. The internship is typically begun following two semesters of course work.

Research Paper or Thesis

The student must complete satisfactorily 3 to 6 hours of REHB 593 (Research in Rehabilitation) under the direction of a chairperson. The chairperson is a member of the behavior analysis and therapy faculty selected by mutual agreement between the student and the faculty member.

For the research paper, an additional graduate faculty member may be selected by mutual agreement between the student and the chairperson to serve as a reader. This is not required.

For the thesis, a second faculty member of the behavior analysis and therapy program will be selected by mutual agreement between the student and the chairperson to serve as thesis committee member. The committee will review the thesis prior to its initiation, as a prospectus, and after its completion, in an oral defense. At the oral defense, a third graduate faculty member, selected by mutual agreement between all parties, will be added to the committee to serve as a reader.

COMMUNICATION DISORDERS AND SCIENCES

The communication disorders and sciences program offers graduate work leading to the Master of Science degree. The program in communication disorders and sciences is designed to develop competence in the assessment and treatment of persons with communication disorders.

Course work is planned to meet the academic and professional requirements for state and national certification, which are required for professional employment. These requirements comprise a minimum of 75 semester hours of course work, at least 30 semester hours of which must be at the graduate level. The M.S. degree program in speech-language pathology will culminate in eligibility for the Certificate of Clinical Competence of the American Speech-Language-Hearing Association and state licenser. ASLHA certification is required for work in agencies, hospitals, medical centers, and higher education settings. In addition, students may take additional course work to qualify them for the Type 10 special certificate in speech and language impaired of the Illinois State Teacher Certification Board.

The program maintains many active research facilities which provide laboratories and specialized equipment for the study of both the normal and impaired functions of the speech, language, and hearing processes. The speech science laboratory is equipped for electromyographic study of the speech musculature, radiotelemetry, electrophysiology of hearing, and spectrographic analysis of speech signals. The experimental audiology laboratory, which includes a large anechoic chamber, is equipped for investigations in hearing sensitivity, localization, central tests, speech discrimination, and evoked response audiometry. The laboratory also has equipment needed for studies in automatic audiometry, middle ear immittance, and acoustic reflex experimentation. The laboratory also has equipment for the measurement of physiological indices of emotion, such as electrophysiologic skin measurements. The department maintains its own mainframe computer terminal and microcomputer laboratory.

Additional information regarding financial aid, programs, and application procedures can be secured by writing to: Communication Disorders and Sciences, Southern Illinois University at Carbondale, Carbondale, IL 62901-6616.

Master's Degree Program Leading to Certification in Speech Pathology

The master's degree requires a minimum of 30 semester hours of acceptable graduate credit (3.0 average), at least 15 semester hours of which are at the 500 level, and the completion of approximately 33 to 36 graduate semester hours in clinic courses, and an approved thesis or research project. The program for the M.S. degree is a five semester course of study of approximately 60 to 66 semester hours. Specific course requirements and total number of hours are generally determined by advisement after consultation with the graduate student.

Students are encouraged to follow one of the following plans:

THESIS PROGRAM: CERTIFICATION IN SPEECH PATHOLOGY.

Core Courses (Required): 14 hours

CDS 507 3 Language I

CDS 517 3 Language II

CDS 505 3 Speech I

CDS 540 3 Neurogenics I

CDS 541 2 Neurogenics II

Electives: 4 hours

5 hours selected from: CDS 408, 428, 431, 438, 450, 460, 485, 503, 512, 517, 521, 525, 526, 528, 530, 533, 536, 544, 548, 550.

Courses selected must show a balance across professional fields of competency and interest.

Clinic Courses: 33 hours

33 hours from CDS 494, 495, 497, 597, 598.

Research Tools: 9 hours

6 hours from CDS 500; and 431, 503, or equivalent.

3 hours additional statistics or research design.

Thesis: 3 hours

3 hours from CDS 593

Total: 63 hours

NON-THESIS PROGRAM: CERTIFICATION IN SPEECH LANGUAGE PATHOLOGY

Core Courses (Required): 14 hours

CDS 507 3 Language I

CDS 517 3 Language II

CDS 505 3 Speech I

CDS 540 3 Neurogenics I

CDS 541 2 Neurogenics

Electives: 9 hours

10 hours selected from: CDS 408, 428, 431, 438, 450, 460, 485, 503, 512, 517, 521, 525, 526, 528, 530, 533, 536, 544, 548, 550.

Courses selected must show a balance across professional fields of competency and interest.

Clinic Courses: 33 hours

33 hours for CDS 494, 495, 497, 597, 598.

Research Tools: 6 hours

6 hours from CDS 500; and 431, 503, or equivalent.

Research Paper: 1 hour

1 hour from CDS 593

Total: 63 hours

In addition to the academic programs detailed above, ASHA certification in speech pathology requires a minimum of 350 clock hours of supervised clinical experience in a combination of settings. Within these settings, there are requirements for types of disorders as well as ages of the population. These requirements are met by assignment to the university clinical center, off-site school practicums and off-site medical practicums. Students will average approximately 50 clock hours per semester in the university clinic and 100 hours in each of the off-site practicums. The actual semester hours of credit for the typical student will vary due to client load but approximately 33 semester hours of credit total (i.e., 3 semesters in the university clinic for 9 semester hours of credit total, and 12 semester hours for each of the two semesters off-site). It should be emphasized that it is the clock hours accumulated that is important in the clinical area and it may be necessary to exceed the 33 semester hours of clinical experience in order to obtain the necessary clock hours for certification. The total program for the M.S. degree meeting the ASHA certification requirements is usually a five semester program of approximately 66 semester hours of credit. Additional time may be required for the thesis program student, or if the student has not met the necessary prerequisites for graduate courses.

The College of Education is entitled to certify students for the public schools; the Department of Communication Disorders and Sciences is entitled to certify

students for the American Speech Language Hearing Association. A comprehensive examination is required by the Graduate School for non-thesis programs. This requirement is met by the successful passing of the NTE ASHA Examination given at regular times during the year.

REHABILITATION ADMINISTRATION AND SERVICES

Students receive their degrees in rehabilitation administration and services. Students may elect to pursue a sequence of classes in rehabilitation administration. However, those with fewer than three years of rehabilitation or related work experience are generally encouraged to take the vocational evaluation and placement sequence. All students must complete a minimum of 45 semester hours of graduate course work, which includes a full-time internship and a research paper or thesis. During the first semester of full-time study or a comparable period for part-time students, the student must have a plan of study approved by an adviser and the degree program coordinator. This plan of study normally includes rehabilitation core, professional course work, and elective coursework, although specific plans may differ for students with varying backgrounds and career goals. The requirements are as follows:

Rehabilitation Core (21 hours)

REHB 513-3 to 4 Medical and Psychosocial Aspects of Disability
REHB 594a-3 Practicum in Rehabilitation
REHB 595-8 Internship in Rehabilitation
REHB 593-6 Research in Rehabilitation
REHB 593-3 Research in Rehabilitation
REHB 599-3 Thesis

Professional Coursework

The student must complete a series of courses approved by the student's faculty adviser and degree program coordinator. This series of courses will normally consist of the 21 hour rehabilitation administration sequence plus 3 hours of electives, or the 18 hour vocational evaluation and placement sequence and 6 hours of electives. Electives are chosen on the basis of their relevance to the career goals. Persons graduating with the vocational evaluation and placement sequence and appropriate field experience (practicum and internship) are immediately eligible to sit for the CCWAVES examination. Persons graduating with the vocational evaluation and placement sequence, and a double major in rehabilitation counseling (including appropriate supervised field experience) are immediately eligible to sit for the CRC examination.

REHABILITATION ADMINISTRATION SEQUENCE

REHB 570-3 Rehabilitation Administration
REHB 573-3 Programming, Budgeting, and Community Resources
REHB 574-3 Staff Training and Development
REHB 576-3 Development and Supervision of Rehabilitation Employees
REHB 578-3 Program Evaluation in Rehabilitation
REHB 581-3 Professional Issues in Rehabilitation
REHB 582-3 Seminar in Rehabilitation Services

Suggested Electives (minimum of 3 hours)

REHB 400-3 Introduction to Rehabilitation
REHB 580-3 Professional and Community Relations in Rehabilitation

VOCATIONAL EVALUATION AND PLACEMENT SEQUENCE

REHB 400-3 Introduction to Rehabilitation
REHB 421-3 Vocational Development and Placement
REHB 431-3 Assessment Procedures in Rehabilitation
REHB 526-3 Issues in Supported Employment
REHB 533-3 Vocational Appraisal
REHB 583-3 Seminar in Vocational Evaluation

Suggested Electives (minimum of 6 hours)

Any course in the rehabilitation administration sequence.

REHB 451-3 General Rehabilitation Counseling
REHB 501-3 Rehabilitation Foundations
REHB 531-3 Individual Assessment Procedures in Rehabilitation
REHB 575-3 Case Management in Rehabilitation
REHB 586-3 Seminar in Job Development and Placement

Practicum and Internship Requirements

Although students are usually required to complete at least 3 semester hours of practicum as well as a full-time internship, prior and concurrent work experience may be substituted for these requirements if recommended by the student's adviser and approved by the rehabilitation administration and services faculty. The options available to the student wishing to substitute work experience for either practicum or internship requirements are as follows.

Option One. A student may request a waiver of the internship requirement and, if approved, substitute 3 semester credit hours of practicum and additional course work to bring the student's program up to the required 45 hour minimum.

Option Two. Students with extensive previous work experience in the field of rehabilitation may request waivers of both the practicum and internship requirements. If the waiver is approved, they will enroll in 6 semester hours of REHB 494, Work Experiences in Rehabilitation, and additional graduate course work up to the required 45 hour minimum.

Waiver request related to options one and two above must be submitted by the student through the faculty adviser to the coordinator of the rehabilitation administration and services program and must be approved by a vote of the rehabilitation administration and services faculty. Waiver requests must include written documentation of the reasons for the request and provide sufficient supporting evidence. Suggested guidelines for the appropriateness of each of the options are: 1) option one for the student with three or more years of satisfactory rehabilitation related work experience and 2) option two for the student with three or more years of satisfactory work experience directly related to the student's chosen professional course sequence. The student with minimal or no rehabilitation related work experience will be expected to complete the required three hours of practicum and a full-time internship.

Requirements for Research Paper or Thesis and Comprehensive Examination

All students are required to complete a scholarly research paper or thesis in a rehabilitation-related area and an oral comprehensive examination. The student completing a graduate thesis must orally defend it before a thesis committee.

REHABILITATION COUNSELING

Rehabilitation counseling is a process which assists individuals with disabilities to cope constructively with their disability, to maximize their abilities, and to enhance their quality of life physically, psychologically, socially, and vocationally. Through training, professional rehabilitation counselors obtain skills in counseling, evaluation, career exploration, job development and placement, and case management.

The focus of the rehabilitation counselor training program is to prepare professional rehabilitation counselors with the knowledge, skills, and attitudes needed to enter the field. During the training program, students acquire counseling skills, knowledge and understanding of medical and psychological impact of chronic illness and disability on all areas of the individual's life including vocational and independent living issues, as well as skills related to assessment and evaluation, and an understanding of the legislative, historical, and philosophical background of rehabilitation. Student's professional development is encouraged through participation in professional rehabilitation counseling organizations.

The rehabilitation counselor training program is fully accredited by the Council on Rehabilitation Education (CORE). Graduates of the program are eligible to sit for the CRC (Certified Rehabilitation Counselor) examination, a national examination administered by the Commission on Rehabilitation Counselor Certification (CRCC).

General Requirements

The course of study within the rehabilitation counselor training program consists of a minimum of 48 semester hours and involves a blend of academic and field experiences. In addition to course work, students must complete one semester of practicum, one semester of internship, and a thesis or research paper. Before graduation students must also pass a comprehensive examination. The required program of study is:

REHB 400 Introduction to Rehabilitation

REHB 421 Vocational Development and Placement

REHB 431 Assessment Procedures in Rehabilitation

REHB 451 General Rehabilitation Counseling

REHB 501 Interpersonal Communication Skills in Rehabilitation

REHB 513 Medical and Psychosocial Aspects of Disability

REHB 575 Case Management in Rehabilitation

REHB 594c Practicum in Rehabilitation

REHB 595 Internship in Rehabilitation

Students are also given the opportunity within their program of study to take electives. In addition to the required course of study for rehabilitation counseling, students may choose to specialize in a particular area by taking additional elective courses. Examples of possibilities of specialization are listed below.

Studies in Substance Abuse

A special sequence of courses is offered within the rehabilitation counselor training program for students interested in working with individuals who have substance abuse problems. Students are required to complete a specific sequence of courses and an internship in a substance abuse treatment setting in addition to the courses required for the master's degree in rehabilitation counseling. Successful completion of this course sequence and field work enables students to sit for the Certification Substance Abuse Counselor Examination in Illinois. Graduate students from other disciplines in the University are eligible to enroll in these courses to complete substance abuse counselor certification requirements.

Studies in Aging

This area of special study offered within the Rehabilitation Institute includes a sequence of three elective courses in aging in addition to those courses required for the general rehabilitation counseling curriculum, and an internship in an agency or facility which serves older adults. Students in other disciplines within the University are eligible to enroll in any of the three courses in aging, however only rehabilitation students will be eligible for the internship.

DOCTOR OF REHABILITATION

The doctoral program in rehabilitation prepares students to function effectively as rehabilitation educators, researchers, or administrators. It does this by fostering the student's development and acquisition of relevant conceptual and experiential skills in evaluation and research methodologies, in rehabilitation service, or in the management of service units.

Admission and Retention Standards

All applicable policies and procedures of the Graduate School with regard to the admission of doctoral students will be followed. Requirements for admission to the doctoral program in rehabilitation exceed those of the Graduate School. The admissions committee of the doctoral program will review all candidates carefully for their special strengths. The following will be considered for all candidates.

1. High academic achievement (normally indicated by a grade point average of 3.5 on a 4-point scale) in a master's program in rehabilitation or a closely related field at an accredited university.
2. Interest in conducting rehabilitation research.
3. Two years of successful performance equivalent to full-time paid employment (post-baccalaureate) in a rehabilitation or related professional position. This may include an approved internship experience at the master's level.
4. At least three letters of recommendation by professional persons familiar with the applicant's performance in academic, research, or service work settings.
5. A personal or telephone interview with the Rh.D. program admissions committee.
6. GRE scores dating back no farther than 5 years.

Applicants will be considered for acceptance into the doctoral program at the beginning of either the fall or spring semester. For a student to be retained in the program, a 3.5 overall grade point average (GPA) must be maintained. Courses in which a grade below *B* is obtained will not be counted toward satisfying the hour requirements for the degree.

Doctoral Committee

The student shall select a chair who will serve as his/her major adviser. In consultation with the chair the student shall select a doctoral committee which is approved by the coordinator of doctoral studies and the Graduate School. At least one member shall be external to the Rehabilitation Institute.

Working together with the chair, the student shall develop a plan of study, designating the courses to be completed. This plan shall be approved by the student's doctoral committee and by the coordinator of doctoral studies and then shall be made a matter of record. Further, the doctoral committee shall serve as the student's dissertation committee.

Admission to Candidacy

Admission to candidacy is granted by the dean of the Graduate School upon the recommendation of the faculty responsible for the student's program after the student has fulfilled the Graduate School residency requirement for the doctoral degree and passed the preliminary examinations.

The written preliminary examinations are designed to assess the breadth and depth of the student's knowledge. They are prepared, administered, and evaluated by Rehabilitation Institute faculty committees appointed by the coordinator of doctoral studies. The preliminary examinations will ordinarily be taken in the fall of the second year of doctoral study.

Dissertation

After admission to candidacy, the student will prepare a dissertation based on original research conducted under the direct supervision of the dissertation chair and committee. The requirements of the Graduate School will govern the formation of the dissertation committee and the preparation and defense of the dissertation. While the dissertation is in preparation, the student will register for no fewer than 24 semester hours in REHB 600, Dissertation. The dissertation should conform to the current edition of the *Publication Manual of the American Psychological Association* and the standards required by the Graduate School.

Degree Requirements

The Doctor of Rehabilitation program emphasizes mastery of skills in research methodology, knowledge of medical and psychosocial aspects of disability, and knowledge of public policy on disability, as well as competency in the area of rehabilitation counseling, rehabilitation administration, behavior analysis and therapy, or communication disorders and sciences. The course of study requires a minimum of 96 post-baccalaureate semester hours, 24 of which are dissertation hours and 27 of which are fulfilled by required courses. All remaining coursework taken by the student will be electives, selected with the approval of the student's doctoral committee.

Required Courses

The student must have successfully completed the following courses no later than 24 months after entering the Doctor of Rehabilitation program:

EPSY 506-4 Inferential Statistics

EPSY 507-4 Multiple Regression

REHB 509a-3 Single Subject Experimental Designs

REHB 509b-3 Group Experimental Designs

REHB 588-3 Seminar in Research in Rehabilitation

REHB 513-3 or 4 Medical and Psychosocial Aspects of Disability

REHB 581-3 Legal and Ethical Issues

REHB 589-3 Professional Seminar in Rehabilitation

The student's preparation at the master's level will be evaluated and up to 30 hours of didactic course work may be accepted toward the completion of the 96 hour minimum requirement for the doctorate. Graduate level didactic courses in rehabilitation counseling, rehabilitation services, rehabilitation administration, behavior analysis and therapy, and communication disorders and sciences will usually be acceptable. Course work in related areas such as counseling, psychology, and social work may qualify.

The goal of the program is to develop high quality professionals. Thus, the student must demonstrate competence in the areas of rehabilitation services offered by the Rehabilitation Institute. This is accomplished through the student's master's degree program, previous work experience, the required courses, supervised

professional experiences, and electives. Rh.D. degree graduates should be well prepared for leadership roles in the areas of rehabilitation administration, service, education, or research.

Courses (REHB)

Courses in this unit may require the purchase of supplemental materials not to exceed \$10 per course. Field trips are required for certain courses.

400-2 to 3 Introduction to Rehabilitation. An introduction to the broad field of rehabilitation, to include the processes (services), facilities and personnel involved. Note: students can enroll in the didactic portion for two credits, or three credits if they elect the field trips. No student can take the field trips alone without taking the didactic portion as well.

401-3 Rehabilitation for Non-Majors. An introduction to the process and practice of rehabilitation for students not majoring in this field. An overview of counseling, evaluation, physical restoration, adjustment services, job placement and rehabilitation administration will be presented. Also a survey of client characteristics will be provided. Clients with sensory, physical, developmental and psychiatric disabilities will be discussed. Career opportunities in rehabilitation will be examined.

403-3 Independent Living Rehabilitation. Survey of principles and methods of independent living for persons with disabilities with attention to client assessment for rehabilitation, effective techniques for specific individuals with disabilities, and the variety of types and organization of independent living programs.

405-3 Introduction to Aging and Rehabilitation. Introduction to the field of aging. Includes social, political, economic and legal issues pertinent to an aging society and rehabilitation.

406-3 Introduction to Behavior Analysis and Therapy. A survey of the principles and procedures in behavior analysis and therapy and the scope of its application to human needs and problems.

419-1 to 3 Cross-Cultural Rehabilitation. (Same as Black American Studies 490.) Major focus on the relationship/comparison of basic cultural, economic and psychosocial processes relative to the rehabilitation of people in contemporary societies. Prerequisite: consent of instructor.

421-3 Vocational Development and Placement. Relates the psychosocial meaning of work, process of vocational development, theories of occupational choice and labor market trends to current and innovative methods of job development, selective placement and follow-up with the handicapped. Prerequisite: consent of instructor.

425-1 to 6 Developing Employment Opportunities. Designed to train rehabilitation personnel in the attitudes, methods and skills pertinent to placement of persons with disabilities in competitive and other occupations. Prerequisite: special standing and consent of instructor.

436-3 to 4 Vocational Evaluation and Adjustment Services. Introduction to the philosophies of evaluation and adjustment services in rehabilitation settings with emphasis on the rationale for use of psychometric testing, functional behavioral analysis, work sampling, situational

assessment and on the job evaluation in relation to the development of individualized adjustment service programs.

445-3 to 12 Rehabilitation Services with Special Populations. Procedures and programs pertinent to the care and treatment of special populations. Three semester credits will ordinarily be granted for each unit. Prerequisite: consent of instructor.

(a)-9 (3, 3, 3) **Alcohol and Drug Abuse.**

(b)-9 (3, 3, 3) **Emotionally Disturbed.**

(c)-9 (3, 3, 3) **Juvenile Offender.**

(d)-9 (3, 3, 3) **Mental Retardation.**

(e)-9 (3, 3, 3) **Physically Disabled.**

(f)-9 (3, 3, 3) **Public Offender.**

(g)-9 (3, 3, 3) **Sensory Disabled.**

(h)-9 (3, 3, 3) **Developmental Disabilities.**

446-3 Psychosocial Aspects of Aging. Selected theories of psychosocial aspects of aging will be presented and the psychological and sociological processes of aging with the ensuing changes will be related to these conceptual frameworks. Included for discussion and related to field experience will be such concerns as stress reactions to retirement, physical disabilities, impact of reduced economic resources, and other personal-social changes in aging. Topics will address the knowledge base needed by students concerned with rehabilitation of aging clients in institutional, community and home settings. Therapeutic techniques to ameliorate these stresses will be an integral part of the course.

447-3 Biomedical Aspect of Aging. The aging process in a life-span developmental perspective; biological theories of aging, physiological changes in middle and old age and their effects on behavior, performance potential, and psychosocial functioning; senility and other age-related disabilities, their prevention and management; geriatric health maintenance and rehabilitation; institutionalization; death and dying. No prerequisites.

452-3 Behavior Change Applications. An overview of the development and evolution of applied behavior analysis. Applications of behavior analysis to problems of social significance in institutions, schools and communities are surveyed. Prerequisite: 406 or consent of instructor.

453-1 to 4 Personal and Family Life Styling. The academic and personal competencies that are characteristic of fully-functioning, integrated persons within the context of our twentieth century environment will be systematically reviewed for adoption in every day living as well as in professional functions. Participants will focus on and experience life styling theories, models, and skills for their own growth and development and learn to assess basic risk-factors in their rehabilitation clients and families prior to helping them program a more balanced, synergistic, and holistic

approach to living. Prerequisite: consent of instructor.

461-3 Introduction to Alcoholism and Drug Abuse. Orientation and introduction to a variety of topics related to alcohol and drug abuse; surveys history, theories of cause and development, consequences of abuse, classes and types of drugs, legislation and other current issues relating to substance abuse and addiction.

468-3 Sexuality and Disability. Research and rehabilitation practices pertaining to the unique psychosexual aspects of various chronically disabling conditions will be examined.

471-3 Rehabilitation and Treatment of the Alcohol and Drug Abusers. A comprehensive examination of substance abuse treatment and rehabilitation; focus on various treatment approaches, treatment settings, and types of counseling to include an overview of individual, group and family techniques; the rehabilitation counselor's role is addressed and necessary skills in treating drug and alcohol abusers. Prerequisite: 461 or consent of instructor.

479-3 Technical Writing in Rehabilitation. Fundamentals of writing skills for rehabilitation specialists, including preparation and drafting of program/grant proposals, vocational evaluation/work adjustment reports, news releases and other publicity materials. Prerequisite: consent of instructor.

490-1 to 6 (1 to 3 per semester) Readings in Rehabilitation. Supervised readings in selected areas. Prerequisite: consent of instructor.

494-1 to 12 Work Experience in Rehabilitation. Rehabilitation 494 and 594 both cannot be counted for a graduate degree, only one or the other can satisfy requirements toward a master's degree. Prerequisite: consent of department.

501-3 Introduction to Interpersonal Skills Development in Rehabilitation Counseling. Focuses upon facilitative interpersonal communication skills necessary in Rehabilitation Counseling Practice. The course provides theory and practice in facilitative interpersonal communication in counseling, behavior therapy and administration services. Included is pre-practicum orientation. Prerequisite: consent of instructor.

503-3 Basic Behavior Analysis. Philosophy, terminology, and basic methodology of experimental and applied behavior analysis. Focuses on a variety of operant and respondent conditioning procedures for shaping new behaviors and modifying established behaviors. Prerequisite: consent of department.

504-3 Foundations of Rehabilitation Research. This course includes: the logic of scientific inquiry; the concepts of research questions and hypotheses; the notion of variables; the relationship among theoretical constructs, operationalism, and measurement instrument reliability and validity; the concepts of control, internal validity and casual inference; sampling methods and external validity; and experimental and descriptive research. Prerequisite: enrollment in Rh.D. degree program or consent.

508-3 Complex Behavior Analysis. Experimental analysis of procedures that result in acquisition, maintenance, and attenuation of complex individual and social behavior. Prerequisite: consent of instructor.

509-6 (3,3) Behavior Analysis Research Designs. Focuses on behavior analysis research design and methodology. Three semester hours will be granted for each unit. (a) Single subject experimental designs; (b) Group experimental designs.

512-3 Legal and Ethical Issues in Behavior Analysis. Focuses on federal and state legislation, litigation, policies, guidelines, and other forms of legal and ethical control of the professional practice of behavior analysis and therapy. Implications for research and service will be discussed.

513-1 to 4 Medical and Psycho-Social Aspects of Disability. A review of the impact of disease and trauma on the human system with special attention on the effects physical limitations and socio-emotional correlates have on human functioning and the rehabilitation process. Prerequisite: consent of department.

515-3 Behavioral Applications to Medical Problems. Examines the use of behavior change procedures and applied behavior analysis in the treatment and rehabilitation of medically related problems such as obesity, alcoholism, headaches, hypertension and cerebral palsy; also, compliance to medical regimens, e.g., diabetes, dental hygiene, exercise; and promotes the utilization of health facilities and community health programs. Issues in training medical personnel to disseminate behavior change programs are also covered. Prerequisite: 409 and 503 or consent of instructor.

523-3 Job Restructuring for Individuals with Disabilities. Introduction to the analysis and measurement of job tasks and the design and layout of work environments with special emphasis on the use of jigs, job restructuring and prosthetic environments for persons with disabilities. Prerequisite: 421 and consent of instructor.

525-3 Developing Job Readiness. Designed to prepare job development and placement specialists and other rehabilitation personnel to develop programs of job readiness aimed at training individuals with disabilities to seek and hold gainful employment. Prerequisite: consent of the instructor.

526-3 Issues in Supported Employment. Focuses on community work options for adults with severe disabilities. These community work options, supported work and supported employment, the issues surrounding transition from school to work, and the difference between sheltered and nonsheltered employment will be discussed from philosophical and practical viewpoints.

530-3 Assessment Procedures in Rehabilitation. Review of fundamental bases of measurement, criteria for evaluating tests, exposure to representative instruments in major categories, and use of test and work samples in assessing the functioning abilities and work potential of individuals with disabilities. Prerequisite: consent of instructor.

531-3 Individual Assessment Procedures in Rehabilitation. Thorough familiarization and practice with independent assessment devices used in program selection and job placement of individuals with various handicaps. Prerequisite: 431 and consent of instructor.

533-3 Vocational Appraisal. An extensive exposure to instruments designed for use with voca-

tional rehabilitation clients. Administration and interpretation of a wide variety of instruments used to gain information to be used in planning for vocational development. Both didactic and experiential to include consideration of information obtained from interviews, tests, and other diagnostic techniques. Prerequisite: consent of instructor.

535-3 Behavioral Observation Methods. Behavioral targeting, observational recording techniques, and issues of validity and reliability of measurement relevant to rehabilitation will be examined. Prerequisite: previous or concurrent enrollment in either 409, 452, or 503 or consent of instructor.

543-3 Child Behavior. A systematic analysis of child behavior. Included is an examination of popular books on child rearing. Emphasizes approaches for remediation of behavior disorders. Prerequisite: consent of instructor.

545-3 Behavior Modification in Mental Retardation. Consideration of behavioral principles as applied in the development of responsive behavior in mentally retarded persons. Prerequisite: consent of instructor.

551-4 Rehabilitation Counseling: Theory and Practice. A didactic and experiential analysis of the underlying theory and techniques of individual and group counseling of individuals with disabilities. Prerequisite: consent of instructor.

553-3 Learning Therapies for Special Populations. Describes treatment, rehabilitation, and teaching procedures with the emotionally disturbed, problem drinkers, mentally retarded, and autisms and other disruptive behaviors. Prerequisite: consent of instructor.

554-3 Behavior Therapy. Considers research findings and basic principles of behavior modification relative to such behavior therapies as desensitization, assertive training, aversive conditioning and behavior rehearsal. Prerequisite: consent of instructor.

557A-3 Self-Regulation of Behavior: Self-Control. The course provides a thorough review of self-control techniques and their application to habit disorders such as smoking, eating, exercise, time-management and nervous habits. Prerequisite: consent of instructor.

557B-3 Self-Regulation of Behavior: Biofeedback. The course provides a comprehensive review of experimental and clinical studies of biofeedback. It concentrates on stress related disorders and provides supervised laboratory experience. A \$10 laboratory fee is charged. Prerequisite: consent of instructor.

558-3 Rehabilitation of Special Alcoholic and Drug Abusing Populations. Emphasis is on the characteristics, assessment, rehabilitation, and unique problems of drug and alcohol abusers within specific populations. Particular attention is given to substance abuse of women, minorities, elderly, adolescents, homosexuals and disabled. Prerequisite: 461 or consent of instructor.

560-3 Private Sector Rehabilitation. A comprehensive introduction to many of the unique characteristics of rehabilitation services offered within the private-for-profit sector which can be applied by practitioners on a national basis.

561-3 Rehabilitation and the Courts. The role of the rehabilitation worker in a variety of court

proceedings will be explored. Emphasis will be on Social Security disability and workmen's compensation cases. The course will involve review of evidence and preparation for testimony. There will be opportunities for mock trials and observation of actual legal proceedings. Some field trips may be required.

562-3 Rehabilitation Facilities and Developmental Centers. Surveys the history and development of rehabilitation facilities and developmental centers for individuals with disabilities and then focuses on current principles and practices of these facilities in terms of nature, classification, objectives, standards, philosophies, theories, programs of services, organization, administration, financing and trends for the future. Prerequisite: consent of instructor.

563-3 Behavioral Analysis: Community Applications. All aspects of behavior analysis applications in the community are examined including historical development, the "state of the art", practical issues and obstacles to conducting behavioral analysis/community research; future trends and directions. Prerequisite: 503 or consent of instructor.

564-3 School Related Behavior. Analysis of student and teacher behavior and the behavioral methods of improving teaching and learning. Prerequisite: consent of instructor.

565-3 Private Practice Rehabilitation. An examination of the establishment of a private rehabilitation practice. How to set up a private practice, the do's and don'ts and attracting and keeping business are detailed. Knowledge concerning how insurance companies evaluate rehabilitation facilities is critical.

566-3 Alcoholism, Drug Abuse and the Family. The family system model is emphasized as a rehabilitation procedure for drug and alcohol abuse. Examines etiology of drug and alcohol abuse, assessment procedures, treatment and rehabilitation, and associated problems such as spouse or child abuse, divorce, and incest from a family context. Prevention techniques are additionally covered. Prerequisite: 461 or consent of instructor.

568-3 Sexual Behavior and Rehabilitation. Consideration of human sexual behavior including basic anatomy and physiology; sexual facts and fallacies; and analysis of sexual inadequacies, variances and deviances. Special emphasis is placed on the application of therapies for the rehabilitation of people with sexual problems. Prerequisite: consent of instructor.

570-3 Rehabilitation Administration. Problem solving approach to current issues in organizational structure and management functions in public and voluntary rehabilitation agencies, decision making, leadership, program development and evaluation. Prerequisite: consent of instructor.

573-3 Programming, Budgeting, and Community Resources. Designed to prepare the student to develop and operate comprehensive or specialized rehabilitation programs with special attention to resource development, fiscal management, and community and public relations. Prerequisite: 570 or consent of instructor.

574-3 Staff Training and Development. This course prepares the student to design, implement,

and supervise an institutional program to train staff in methods of direct service to the institution's clients. Each student will actually design and submit a program through simulation. Lecture/workshop format.

575-3 Case Management in Rehabilitation Counseling. Basic procedures in providing and coordinating available human services based on individual need in the context of a professional-client relationship, and the basics of recording and reporting such services. Prerequisite: consent of instructor.

576-2 to 3 Development and Supervision of Rehabilitation Employees. Current and progressive supervisory practices in rehabilitation with emphasis on employee development through in-service training, periodic evaluation and related methods. Prerequisite: consent of instructor.

578-3 Program Evaluation in Rehabilitation. An analysis of the development and utilization of a program evaluation system in rehabilitation settings with focus given to system design, monitoring techniques and service program development. Students will be trained in the advanced practice of program evaluation techniques and their application to rehabilitation settings. Prerequisite: consent of instructor.

579-3 Advanced Fiscal Management in Rehabilitation. Application of fund and functional accounting in rehabilitation to include fiscal reporting and record keeping, fiscal planning and management in rehabilitation. Prerequisite: 570 and 573.

580-3 Professional and Community Relations in Rehabilitation. Examination of the linkages and needs of rehabilitation programs and agencies in the area of community and professional relations, with special reference to the role of administrator. Application of marketing principles to the management of external relations in rehabilitation settings. Prerequisite: consent of instructor.

581-3 Professional Issues in Rehabilitation. Focus is on legal and ethical issues and issues related to legislative and public policy formulation. Implications for rehabilitation programs, practice and research are emphasized.

582-1 to 4 Seminar in Rehabilitation Services. Special consideration of factors in the organization and management of rehabilitation services. Prerequisite: consent of instructor.

583-1 to 4 Seminar in Work Evaluation. Select attention to procedures/models for assessing work readiness of personnel with disabilities. Prerequisite: consent of instructor.

584-1 to 6 (1 to 2 per semester) Seminar in Behavior Analysis and Therapy. Special topics and new developments in modifying human behavior. Prerequisite: consent of instructor.

585-1 to 4 Seminar in Counseling/Coordination Services. Consideration of special issues in counseling and delivery of services. Prerequisite: consent of instructor.

586-3 Seminar in Job Development and Placement. Consideration of special issues in job development and placement philosophy, techniques and research concerning individuals with disabilities. Prerequisite: consent of instructor.

587-3 Seminar in Correlates of Disability. A systematic analysis of the behavioral socio-cultural

implication of disabling conditions. Emphasizes the rehabilitation process in remediation of debilitating conditions. Prerequisite: 513 or consent of instructor.

588-3 Seminar in Research in Rehabilitation. Advanced seminar focusing upon specialized and advanced topics in research in rehabilitation. This course is designed to prepare doctoral students in rehabilitation with the special tools needed to carry out doctoral dissertation and other advanced research projects. Prerequisite: consent of instructor.

589-1 to 18 (1 per semester) Professional Seminar in Rehabilitation. The course involves advanced level presentations focusing on current research, applied practices, and innovations in rehabilitation. Presentations are made by faculty, graduate students and guest experts. A minimum of four semester hours required for Doctor of Rehabilitation degree.

591-1 to 18 Independent Projects in Rehabilitation. Systematic readings and development of individual projects in pertinent rehabilitation areas. No more than six hours may be counted toward the master's degree. Prerequisite: consent of instructor.

592-1 to 16 Professional Supervision in Rehabilitation. Experience provided in the supervision of research, teaching, and rehabilitation services. No more than four hours may be taken in any semester. Prerequisite: Doctoral student in rehabilitation and consent of instructor.

593-1 to 18 Research in Rehabilitation. Systematic investigation of factors and procedures relevant to rehabilitation. No more than six hours may be counted toward the master's degree. Prerequisite: consent of instructor.

594-1 to 12 Practicum in Rehabilitation. Supervised experiences in agencies in rehabilitation. (a) Administration. Rehabilitation facilities management/supervision, in planning, programming and evaluation. (b) (Same as Psychology 596.) Behavior modification. Application of behavioral analysis/methods in human treatment and in management. (c) Counseling. Development of counseling skills with individuals and groups to include work related functions. Prerequisite: (a,b,c) admission to the specific degree program; (c) 501 and 551.

595-1 to 12 Internship in Rehabilitation. Extended practice in rehabilitation settings cooperatively guided and supervised by agency staff and university faculty. Graded *S/U* only. Prerequisite: appropriate degree specific practicum and consent of department.

599-1 to 6 Thesis. Prerequisite: consent of instr.

600-1 to 30 (1 to 12 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Rehabilitation degree. Prerequisite: doctoral candidate in rehabilitation.

601-1 per semester Continuing Enrollment.

For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Social Work

E-mail: sandyb@siucvmb.siu.edu

SCHOOL OF SOCIAL WORK

Bratton, Letitia B., Assistant Professor, D.S.W., Catholic University of America, 1992; 1995. Health/mental health practice, policy, health care needs of adolescents and the elderly.

Gammon, Elizabeth A., Assistant Professor, Ph.D., University of Wisconsin at Madison, 1989; 1991. Medical social work, international social work with disabilities, coping skills and training.

Miah, Muhammad M.R., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1985; 1985. Health/mental health policy, research, human behavior in the social environment ethnicity/multiculturalism.

Raske, Martha, Assistant Professor, Ph.D., University of Illinois at Chicago, 1995; 1994. Research, policy, practice, mental health services research, programs and policies regarding women diagnosed mentally ill.

Reichert, Elisabeth, Assistant Professor, Ph.D., University of Tennessee at Knoxville, 1989; 1994. Practice, policy, human behavior and the social environment, clinical social work with sexual abuse/incest survivors, battered women, crisis intervention.

Soliman, Hussein H., Assistant Professor, Ph.D., University of Tennessee 1993; 1993. Research, mental health services/environmental disaster, community and family.

Tracy, Martin B., Professor and *Director*, Ph.D., University of Illinois, 1982; 1994. Policy, cross-national policy analysis of income maintenance, health care, and family allowance systems in industrial and economically developing nations; community-based, integrated social service delivery systems for both children and elderly populations; public retirement systems for low-income workers and women.

The School of Social Work offers graduate work leading to the Master of Social Work degree. The M.S.W. program is fully accredited by the Council on Social Work Education.

Master of Social Work

The Master of Social Work degree program offers preparation for professional social work practice. The organizing principle of the M.S.W. program is the improvement of the quality of individual life through the enhancement of social and economic justice and opportunity. Upon completion of the M.S.W. program, the student will acquire knowledge, values, and skills consonant with the social work profession and be capable ultimately of engaging in autonomous social work practice. Graduates with such preparation will be able to effectively deliver the social services needed to meet human needs in both urban and rural areas.

Students in the first year of the program take the foundation curriculum which consists of 30 semester hours and includes the following courses:

Fall (15 semester hours)

SW 500-3 Human Behavior & the Social Environment I

SW 505-3 Foundations of Social Work & Services

SW 510-3 Social Work Practice I

SW 511-3 Social Work Research

SW 542-4 Social Work Practicum I

Spring (15 semester hours)

SW 501-3 Human Behavior & the Social Environment II

SW 504-2 Ethnic Diversity & Social Work Practice

SW 506-3 Social Welfare Policy Analysis & Design

SW 520-3 Social Work Practice I

SW 542-4 Social Work Practicum II

The second year curriculum is organized around the following emphasis areas: health/mental health and child welfare. The school also offers course work in preparation for School Social Work Type 73 Certification by the Illinois State Board of Education. Applicants must indicate their preference for an emphasis area. Although we attempt to accommodate the applicant's first preference for a

second year emphasis area, we do not guarantee that individuals will receive their first choice in emphasis area or in field practicum assignment.

In each year of study, in addition to classroom work, students are required to take field practicum. Applied learning through field practice is an integral component of social work education. Field instruction provides the student with the opportunity for applying social work theory and conceptual learning to realistic and practical situations. Students may not substitute current or past, paid or volunteer, social work experience for field practicum requirements of the M.S.W. program. While the school takes into account the student's career goals in the selection of the field practicum assignment, we do not guarantee that students will receive their first preference of field assignment.

Admission Requirements

To be considered for admission to the regular two year M.S.W. program applicants must:

1. Meet all admission requirements set forth by the Graduate School.
2. Have a GPA of at least 3.0 (on a 4.0 scale) in the last two years of undergraduate course work.
3. Show evidence of a broad liberal arts base with substantial preparation in the social and behavioral science and humanities.
4. Demonstrated content in human biology and introductory statistics.
5. Receive a satisfactory score on the Graduate Record Examination (GRE).

Documented potential for the profession of social work is considered a part of the admission criteria which may also include an interview prior to acceptance. Entry is in the fall semester for the regular two year program.

To apply, you must complete and submit a Graduate School application and an M.S.W. program application. Application material may be obtained from: M.S.W. Admission's Office, School of Social Work, Southern Illinois University at Carbondale, Carbondale, IL 62901.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Applicants who wish to be considered for advanced standing must meet all criteria noted above, with the addition of a bachelor's degree in social work from an accredited program. Applicants seeking admission with advanced standing must demonstrate content in human biology, introductory statistics and have GRE scores on file. To be considered for admission applicants are required to register as unclassified students with the Graduate School, and receive a grade of *B* or better in each of the following courses: SW 502, 512, and 522. Such applicants then are eligible for recommendation to the M.S.W. program with advanced standing in the fall semester.

Applicants admitted for either the basic two-year program or for advanced standing may be required to take additional courses as a condition of admission.

A reduced-load program is available for a limited number of students with or without a B.S. degree in social work, who are either fully employed or prefer to take fewer than 3 courses per semester. This program requires a minimum of 2 consecutive semesters of full-time residency as defined by the University (e.g., fall-spring, spring-summer, or summer-fall). Requests to change from full-time to full-time reduced-load status requires prior approval of the director.

Each application will be individually reviewed; however, meeting all stated criteria will not automatically guarantee admission to the school.

The deadline for applications is February 15 for the advanced standing program and March 15 for the regular two year program.

Applicants must apply to the School of Social Work and be recommended to the Graduate School for official admissions. Students accepted into the M.S.W.

program are admitted in the fall and must register for the semester they are admitted.

Degree Requirements

Students admitted to the regular two-year program are required to complete the first year foundation curriculum and the second year advanced curriculum. They are required to complete a minimum of 60 semester hours of graduate course work taken in the approved sequence.

Students with a bachelor's degree in social work from an accredited program may be admitted with advanced standing. These students are required to complete 9 semester hours of transition courses with a grade of *B* or better in each course, and a minimum of 30 semester hours of the second year graduate course curriculum, including all required courses, taken in the approved sequence.

Within limits imposed by the policies of the Graduate School of the University, transfer credits will be permitted for up to 30 semester hours for applicants who wish to transfer from another graduate program in social work. Candidates must maintain a 3.0 on a 4.0 scale.

Student Advisement

Upon admission to the Master of Social Work degree program, the student will be assigned a faculty adviser. The adviser is responsible for supervision of the student's progress and is available for career counseling as well as assisting in other matters which might arise in connection with the student's work.

Financial Aid

The program offers limited financial assistance through graduate assistantships. Other scholarships, grants-in-aid, etc., may be applied for through the Graduate School, Southern Illinois University at Carbondale, Carbondale, IL 62901-4716.

Courses (SOCW)

421-3 Social Welfare Policy. In-depth examination of current social welfare policy and program issues in the context of social welfare history in the United States. Utilizes a systematic analytical framework for critical study of multiple causal factors (socio-economic, cultural, governmental structure). Prerequisite: 275, 291 and 383.

426-4 Social Factors in Personality and Adjustment. (Same as Psychology 464) Review of selected theoretical orientations and research traditions in social psychology. Comparison of different theoretical and methodological approaches — symbolic interaction, role theory, developmental and social psychology, theories of attitude organization and change, studies of belief and value systems, theories of socialization.

446-1 to 4 Selected Topics in Social Work. Seminar on selected problems and issues in the social work practice. Content varies with interests of instructor and students. Prerequisite: junior standing.

478-1 to 6 International Social Work: Generalist Policy and Practice. Provides an international perspective for the study of social work groups, organizations and communities. Focuses on the examination of assessment and problem solving interventions and cross-cultural comparisons of policy and practice in Austria, Switzerland and Germany.

496-1 to 6 Independent Research in Social Work. Provides opportunity for students to conduct independent research with the guidance of a

faculty member. Topics of research are identified by the student and faculty member. Prerequisite: consent of instructor.

500-3 Human Behavior in the Social Environment. Life span development. Students acquire a foundation knowledge of human development in the social environment over the life span. Normal development stages and impacts of social systems on the growth of individuals in diverse populations of rural areas is emphasized. Prerequisite: admission to the program.

501-3 Generalist Practice. This course emphasizes the development of advanced intervention skills related to generalist practice with individuals, families, groups, organizations and communities in multiple-service, community-based agencies characteristic of rural areas. Includes mandatory interviewing skills weekend. Prerequisite: admission to the program.

502-3 Perspectives on Human Behavior and Social Environment. Selective examination of the theoretical basis of development and inter-relational aspects of individuals and families throughout the life span. Normal development stages and impacts of social systems on the growth of individuals in diverse populations of rural areas is emphasized. Prerequisite: eligibility for advanced standing. Must be taken concurrently with 512 and 522. Grade of *B* or better required for admission to the advanced standing program.

504-2 Ethnic Diversity and Social Service. Examination of issues involved in delivering social services to various ethnic and cultural groups. Sensitizes students to personal, familial, or community problems of ethnic or cultural origin. Implications for understanding social services to populations who have experienced discrimination are discussed. Prerequisite: admission to the program.

505-2 Foundations of Social Work and Services. Examination of both historical and philosophical developments of the social welfare system as an institution and social work as a profession in the United States. Future trends in social work education and practice are predicted based on social and political mentality prevailing at present time. Prerequisite: admission to program.

510-3 Generalist Systems Theory. Examination of systems and advanced generalist practice theories within the context of rural, integrated and multiple-service social services delivery systems. Specific practice examples will be used to facilitate understanding of how theory guides practice with individuals, families, groups, organizations and communities. Prerequisite: admission to the program.

511-3 Social Work Research. This course emphasizes the importance of scientific inquiry within social work practice and covers the application of basic concepts of research methodology to social work including problem formulation, research design, sampling, measurement, and data analysis. Includes single-system methodology as it applies to social work practice in rural areas. Prepares students to conduct an individualized single-system project based on practice intervention with clients or systems in their practicum setting in the final semester of their studies. Prerequisite: admission to program and introduction to statistics course.

512-3 Research Design/Theory Building. Selective examination of inductive and deductive methods in social work knowledge building. Includes research methodologies and group designs as applied to social work practices in rural areas. Prepares students to conduct an individualized single-system project based on practice intervention with clients or systems in their practicum setting in the final semester of their studies. Prerequisite: eligibility for advanced standing. Must be taken concurrently with 502 and 522. Grade of *B* or better required for admission to the advanced standing program.

520-3 Social Work Practice II. Foundation practice focusing on process, methods, and skills for work with groups, communities, and organizations. Prerequisite: 510.

521-3 Social Welfare Policy. Examines the historical development of social welfare and professional social work in Europe and the United States. The course introduces a systematic framework for policy analysis with particular attention paid to policies affecting diverse rural population, women and minorities. Prerequisite: admission to program.

522-3 Social Welfare Policy Development and Analysis. Selective examination of the historical development of social welfare and professional social work in Europe and the United States. Uses a systematic framework for policy

analysis with particular attention paid to policies affecting women, low income, oppressed and diverse rural populations. Prerequisite: eligibility for advanced standing. Must be taken concurrently with 502, 512. Grade of *B* or better required for admission to the advanced standing program.

530-3 Substance Abuse and Social Work Practice. In-depth knowledge of social work assessment of both individuals and families involved in substance abuse. Students are provided with advanced knowledge and skills in various social work intervention models applicable to the area of substance abuse. Prerequisite: completion of foundation or transition courses or consent of school.

531-2 Psychopathology. This course provides a basic knowledge of psychopathology and how it impacts individual functioning and family dynamics. Students become familiar with the theoretical basis and the basic structure of DSM-IV and models of interdisciplinary clinical practice in mental health. Prerequisite: admission to program.

532-3 Evaluation Research. This course focuses on the application of research methods especially in evaluating programs or program components in the area of concentration and to the practicum experience. Includes content on self-evaluation in practice. Prerequisite: 543 and introduction to statistics course.

533-2 Social Work Practice in the Schools. In-depth examination of the history and practice of social work in primary and secondary schools. Roles of school social workers and practice approaches are emphasized. Prerequisite: completion of foundation or transition courses and admission to the School of Social Work certification program.

535-3 Legal Aspects of Social Work Practice. Examination of law and legal procedures that relate directly to social work practice in general. Legal perspectives of a specific concentration field of practice are discussed in depth. Prerequisite: completion of foundation or transition courses or school consent.

541-4 Foundation Practicum/Seminar I. Structured and supervised on-site field practice in selected agency with concurrent seminar. Practicum is equivalent to twelve hours per week for 15 weeks (360 hours) and seminar meets once per week for two hours. Graded *S/U*. The seminar emphasized the relationship between practice, policy, HBSE and research curricula. Prerequisite: admission to the program.

542-4 Foundation Practicum/Seminar II. Second on-site field practice with concurrent seminar. Continuation of 541. Graded *S/U*. Prerequisite: 541.

543-1 to 6 Advanced Practicum/Seminar I. On-site concentration specific field practice in an approved agency with appropriate supervision. Practicum is equivalent to twelve hours per week for 15 weeks with a concurrent seminar. Credit based on time spent in the agency. Six credit hours of practicum will be equivalent to 360 on-site hours. Field practicum requirement (six credit hours) may be met through two consecutive semesters or one block field placement. The practicum and practicum seminar focus on the

application of advanced generalist theory, knowledge and skills covered in the curriculum. Prerequisite: completion of foundation courses or advanced standing and 502, 512 and 522.

544-1 to 6 Advanced Practicum/Seminar II. A continuation of the concentration specific practicum of three days in the field for 15 weeks with a concurrent seminar. Graded *S/U*. Continuation of 543. Prerequisite: 543.

546-2 to 4 Selected Topics in Advanced Social Work. Advanced knowledge and skills particularly useful for management and supervision in social services with application to case materials. Theories, models and techniques of modern human service management, especially suitable to multiple-service agencies in rural settings. Prerequisite: completion of foundation or transition courses or consent of school.

550-2 Social Work Practice in Health and Mental Health Settings. Examination of social and emotional impacts of illness and death on individuals. Implications of physical and mental disorders to social work practice are discussed with particular emphasis on cultural, racial, religious, gender and other psychosocial aspects of illness. Prerequisite: completion of foundation or transition courses or school consent.

551-3 Health and Mental Health Practice I. This is the first of a two-part course that emphasizes health and mental health delivery within systems theory and an advanced generalist practice skills framework. Includes case studies and exercise aimed at practice with diverse populations in rural areas. Provides instruction on diagnosis using psychopathology and DSM-IV. Prerequisite: completion of foundation or standing and 502, 512 and 522.

552-3 Health and Mental Practice II. The second of the practice course on advanced skills in health and mental health. Continuation of 551. Application of treatment modalities. Prerequisite: 543.

555-3 Advanced Policy Analysis: Health and Mental Health. This course applies a systematic analytical framework for a critical and in-depth analysis of federal, state and local policies that shape programs affecting health and mental health in rural settings. Examines how policy impacts practice with diverse populations. Prerequisite: completion of foundation courses or advanced standing and 502, 512 and 522.

557-3 Community Mental Health and the African-American. Introduction to clinical techniques useful for facilitating community functions and changes within the context of the African-American experience. An exploration of the culture of the African-American community builds the basis for community mental health service strategies. Prerequisite: completion of foundation or transition courses or consent of school.

558-3 Women and Community Mental Health. Examination of mental health problems of American women and exploration of effective interventive strategies. Emphasis on rural mental health services for low-income women. Prerequisite: completion of foundation or transition courses or consent of school.

559-3 Aging and Mental Health. Examination of the nature and etiology of mental health problems facing older Americans. Review of research

reports to build a theoretical basis for mental disorders. Prerequisite: completion of foundation or transition courses or consent of school.

560-2 Social Work Practice with Children and Youth. Advanced level of knowledge and skills that are relevant to the prevention and amelioration of problems related to maladaptive parent-child interaction, parental inability to provide child care, parents' unrealistic expectations of a physically and mentally limited child. Prerequisite: completion of foundation or transition courses or school consent.

561-3 Children, Youth and Families Practice I. This is the first part of a two-part course that emphasizes family-centered practice (family preservation, integrated services) within systems theory and an advanced generalist practice skills framework. Includes case studies and exercises aimed at practice with diverse populations in rural areas. Provides instruction on diagnosis using psychopathology and DSM-IV. Prerequisite: completion of foundation courses or advanced standing and 502, 512 and 522.

562-3 Children, Youth and Families Practice II. The second part of the practice course on advanced skills. Continuation of 561. Application of treatment modalities. Prerequisite: 543.

565-3 Advanced Policy Analysis: Children, Youth and Families. This course applies a systematic analytical framework for a critical and in-depth analysis of federal, state and local policies that shape programs affecting children, youth and families in rural settings. Examines how policy impacts practice with diverse populations. Prerequisite: completion of foundation courses or advanced standing and 502, 512 and 522.

567-2 Seminar in School Social Work. Exploration of policies, programs, practice and legislative trends affecting public service in school social work. Prerequisite: 533.

570-3 Gerontology and Social Work. Examines the major psycho-social and ecological theories of human aging within the framework of social work practice. Extrapolations of those theories and application of them to social work practice and research are emphasized. Prerequisite: completion of foundation or transition courses or consent of school.

575-3 Policy and Program Issues of Aging. Examination of public policies that impact on the quality of life of the elderly. Major programs are identified and analyzed. Future policy issues are discussed. Prerequisite: completion of foundation or transition courses or consent of school.

576-1 to 6 Selected Topics in Aging Practice Issues. Examination of selected knowledge and skills useful for gerontological social work practice. In-depth study on specific topics will be conducted. Prerequisite: 570.

577-1 to 4 Selected Topics in Research. Individualized advanced research projects related to student interest. Graded *S/U*. Prerequisite: completion of foundation or transition courses or consent of school.

578-3 International Social Work. Critical examination of nature and scope of social welfare programs in other nations including: personal social services, income maintenance, health care and social development programs. Emphasis on policies in Third World countries. Prerequisite:

completion of foundation or transition courses or consent of school.

598-1 to 4 Social Work Research Paper. Preparation of a final research paper as partial requirement for the M.S.W. degree. Graded *S/U* only. Prerequisite: completion of foundation or transition courses and approval of the school.

599-3 Thesis in Social Work. A partial and optional requirement for the M.S.W. degree. A written report of the student's research project in the area of concentration. Prerequisite: completion of

all foundation or transition courses or school consent. Graded *S/U* only.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Sociology

E-mail: sociology@siu.edu

COLLEGE OF LIBERAL ARTS

Alix, Ernest K., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1966; 1967.

Best, Joel, Professor and *Chair*, Ph.D., University of California at Berkeley, 1971; 1991. Deviance and social control, social problems, sociology of popular culture, history of crime.

Blinde, Elaine M., Associate Professor, Ph.D., University of Illinois, 1987; 1987. Sociology of sport, gender, social psychology.

Brooks, Melvin, Associate Professor, *Emeritus*, Ph.D., University of Wisconsin, 1941; 1956.

Burger, Thomas, Associate Professor, Ph.D., Duke University, 1972; 1973. Theory, history of social thought, social stratification.

Eynon, Thomas G., Professor, Ph.D., Ohio State University, 1959; 1968. Crime/delinquency, criminal justice/corrections, social change, energy and society.

Hawkes, Roland K., Associate Professor, *Emeritus*, Ph.D., Johns Hopkins University, 1967; 1970.

Hendrix, Lewellyn, Associate Professor, Ph.D., Princeton University, 1974; 1971. Family and kinship, cross-cultural research.

Hope, Keith, Professor, Ph.D., London University, 1963; 1986. Statistics, social stratification and mobility, methods, political sociology.

Matsuo, Hisako, Assistant Professor, Ph.D., University of California, Riverside, 1994; 1994. Race and ethnicity, complex organizations, comparative studies, methods.

Nall, Frank C., II, Associate Professor, *Emeritus*, Ph.D., Michigan State University, 1959; 1964.

Pryor, Doug, Assistant Professor, Ph.D., Indiana University, 1994; 1995. Deviant behavior, criminology, sexuality.

Schneider, Mark A., Assistant Professor, Yale, 1985; 1994. Theory, culture, and science.

Shelby, Lon R., Professor, *Emeritus*, Ph.D., University of North Carolina, 1962; 1969.

Snyder, Charles R., Professor, *Emeritus*, Ph.D., Yale University, 1954; 1960.

Taub, Diane E., Associate Professor, Ph.D., University of Kentucky, 1986; 1987. Deviant behavior, medical sociology, social psychology.

Ward, Kathryn B., Professor, Ph.D., University of Iowa, 1982; 1982. Social demography, women, cross-national studies.

Williams, Rhys H., Associate Professor, Ph.D., University of Massachusetts, Amherst, 1988; 1989. Political sociology, culture, religion, theory.

Wright, Mareena, Assistant Professor, Ph.D., University of North Carolina 1992; 1992. Family, aging, life course, methodology, women's studies.

Associate Faculty in Doctoral Program

Castellano, Thomas C.....	Admin. of Justice
Ferdinand, Theodore N.....	Admin. of Justice
Garofalo, James.....	Admin. of Justice
Riedel, Marc P.....	Admin. of Justice

The Department of Sociology offers graduate work leading to the M.A. and Ph.D. degrees. The M.A. degree program gives students an opportunity to acquire a general knowledge of sociology through lecture courses, seminars, and exposure to a variety of theoretical and methodological approaches. The Ph.D. degree program is centered around advanced offerings in the areas of theory-methods, family, power and inequality, and deviance. The faculty of the department is research-oriented and supports such an orientation on the part of its students. The department maintains a small library and computer facility.

Admission to Graduate Study in Sociology

The department requires an undergraduate GPA of 3.0 for admission to the M.A. degree program and a graduate GPA of 3.5 for admission to the Ph.D. degree program. Reference letters and transcripts of all undergraduate and graduate academic grades must be submitted to the department for review by the graduate admissions committee. Scores from the Graduate Record Examination

are welcome. International students must achieve 550 or better on TOEFL scores. Persons seeking more information should write: Director of Graduate Studies, Department of Sociology, Southern Illinois University at Carbondale, Carbondale, IL 62901-4524.

Graduate Assistantships and Fellowships

Assistantships for qualified students are available through the department on a competitive basis. There are also various fellowships awarded by the Graduate School in University-wide competition. Students funded through the department are required to enroll in three courses each semester, taking no more than one audit and one individual readings course each academic year. Funding is limited to four semesters for M.A. degree students and eight semesters for Ph.D. degree students. A student's continued funding is contingent on the student's normal progress in the program and on the availability of funds.

Master of Arts Degree

The Master of Arts degree in sociology requires a minimum of 32 semester hours of course work and a research paper. The specific course requirements are: SOC 501, Classical Sociological Theory; SOC 526a, Quantitative Methods in Sociology; SOC 512, Sociological Research; three research seminars in sociology; one additional 400 or 500 level course in sociology; and four semester hours in SOC 591, Individual Research (for completion of the master's degree research paper). The director of graduate studies serves as academic adviser for all M.A. degree students.

Master's Research Paper. The research paper is developed from a seminar paper produced in a 500-level sociology course. Students wishing to do a master's research paper on a topic not covered under the seminar offerings can petition the department's graduate studies committee for an exception to this rule. The faculty member in charge of the seminar will also serve as the adviser for the master's research paper. Students will enroll with this faculty member for 4 semester hours in SOC 591, Individual Research, for the completion of the research paper. This course can be taken concurrently with or after the research seminar. The research paper will then be submitted for evaluation to another faculty member appointed by the director of graduate studies, in concurrence with the faculty adviser for the paper. The master's research paper normally is 20 to 40 pages in length and uses the standard ASA reference style. In addition to the copy required by the Graduate School, 1 suitably bound copy must be deposited in the department library.

Early Admission to the Ph.D. Degree Program. Upon completion of 2 semesters of full-time study, a student may petition to waive the M.A. degree and be admitted to the Ph.D. degree program in sociology, if the following conditions have been met: 1) minimum GPA of 3.7 during the first year of study; and 2) departmental approval of a research paper completed during the first year of study. The procedure and standards for approval of the paper are the same as with the regular master's research paper.

Doctor of Philosophy Degree

Advisement. The responsibility for initial advisement rests with the director of graduate studies. As soon as possible, the director of graduate studies, in consultation with the student, will request an appropriate member of the department's graduate faculty to serve as the student's academic adviser. This adviser will help prepare a general plan of study. Any change of adviser must have the concurrence of the director of graduate studies.

It is the student's responsibility to develop, in consultation with the adviser, a plan of study designating the primary and secondary areas of examination. At this point, the student expresses a preference for a program committee of 3 or 4 faculty representing the chosen areas of examination. After consultation with the appropriate faculty, the director of graduate studies appoints the student's program committee and enters the membership of the committee in the student's records, along with the declared primary and secondary areas of examination. The program committee is chaired by the student's academic adviser.

Research Tool Requirement. Doctoral students must complete the following courses: SOC 501, 502, 512, and 526a,b. In addition to these courses students must develop research skills that are appropriate and necessary for their dissertation research. It is the responsibility of the student's program adviser to supervise the student's development of these research skills.

Course Work and Readings. In addition to the regularly offered courses and seminars, the department provides supervised readings and research courses, depending upon the availability of faculty members. Supervised readings and research courses are not to be taken as substitutes for regularly scheduled courses and seminars, and registration in them requires prior approval by the student's adviser.

Preparation of a Readings List. Students are expected to prepare themselves for comprehensive examinations through course work and reading. Each student must develop, with the assistance of the program committee, a readings list covering the student's examination areas. This readings list must include major works in each of the examination areas. It must also include the most recent works pertinent to the student's anticipated dissertation research. The readings list as a whole, must be prefaced by a statement of purpose providing a rationale for the selected titles. The final list must be approved, in formal session, by the student's program committee, no later than the end of the full-time student's third semester in residence.

Comprehensive Examinations. Each student must declare 2 primary areas for the comprehensive examination (one of which must be sociological theory-methods) and 2 secondary areas of examination. Students, in consultation with their advisers, may select their own examination areas. However, the student must have taken at least 1 graduate seminar in each primary area, or be able to show other substantial preparation in the area while at SIUC.

One secondary area may be chosen in a department other than sociology. The student shall in this case meet the requirements for a Ph.D. secondary field in the department concerned. Relevance of the outside area to the student's total program must be demonstrated, and approval must be obtained from the graduate studies committee.

To qualify for the status of candidate for the Ph.D. degree, the student must pass written comprehensive examinations. Examinations are based on the final readings list as approved by the student's program committee. The comprehensive examinations consist of a six-hour exam in each primary area and a three-hour exam in each secondary area.

The examinations are prepared, administered, and evaluated by the student's program committee and supplemented by other members of the graduate faculty, in order to provide at least two readers in each of the primary and secondary areas. For each primary and secondary area, the student must obtain the consent of two faculty members with competence in the area to serve as readers. The student and adviser must submit a list of the student's areas and proposed readers to the director of graduate studies. The chair of the program committee

also serves as chair of the examination committee. Supplementary members of the examination committee are, upon the recommendation of the program committee's chair, appointed by the director of graduate studies.

The comprehensive examinations must be taken during the full-time student's fifth semester in the program. The student may take all exams in either the fourth or the twelfth week of the semester, or opt to take theory-methods and one secondary exam at the early date and the rest at the later date. It is the responsibility of the chair of the examination committee, and of the director of graduate studies, to ensure that the examinations are properly prepared, scheduled, administered, and monitored.

Examination results are reported to the director of graduate studies by the chair of the student's examination committee within two weeks from the date of the examination, and the director of graduate studies notifies the student of the results. A failed examination in any area must be retaken no later than the next semester's scheduled dates. If an area exam is failed a second time, the graduate studies committee must be petitioned for the privilege of a final retake. The written petition must include the student's diagnosis of the reasons for the failure and a detailed plan for remedial work. The recommendation of the graduate studies committee is forwarded to the department chair, who has the final decision on the matter. A student is entitled to a combined total of no more than three retakes.

On successful completion of the comprehensive examinations and upon the recommendation of the director of graduate studies to the dean of the Graduate School, the student attains the status of candidate for the Ph.D. degree.

Dissertation. The dissertation is the single most important requirement for the Ph.D. degree, and the student should start thinking about potential dissertation topics soon after admission. Information concerning Graduate School requirements regarding the dissertation is contained in the Graduate Catalog.

After completing comprehensive examinations, the student selects a dissertation director who must be approved by the department chair and the dean of the Graduate School. In consultation with the dissertation director, the student prepares a detailed dissertation prospectus, showing clearly the purpose and scope of the research, its relation to the previous work in the field, its theoretical relevance and significance, and the research methods and techniques. The prospectus must contain a section documenting the student's training and abilities in using the proposed research methods and techniques. When the prospectus is ready for presentation, the department chair appoints a dissertation committee with the student's dissertation director serving as chair. The dissertation committee shall consist of 5 graduate faculty members, including 1 from outside the Department of Sociology.

The prospectus must be approved by the dissertation committee in formal session and filed with the graduate program secretary. A prospectus must be approved no later than the end of the full-time student's sixth semester in the program.

Dissertation Defense. The completed dissertation must be acceptable to the chair of the dissertation committee before being circulated among committee members for evaluation.

After acceptance of the dissertation by the candidate's dissertation committee, an oral examination will be conducted by the committee in open meeting, as specified by Graduate School regulations. This examination will be based upon the contents and implications of the dissertation. The examination may not be scheduled sooner than 4 weeks after the completed dissertation has been distributed to the dissertation committee. A public announcement and a copy of the dissertation shall be made available to other faculty of the department at least 1

week before the examination. Upon satisfactory completion of the oral examination, the student must submit 2 copies of the dissertation to the Graduate School and another copy, suitably bound, must be deposited in the department library.

Expected Progress Through the Ph.D. Degree Program for a Full-Time Student.

Semesters 1 and 2: Course work: Minimum grade point average of 3.5; at least four 500-level sociology courses to be taken during the 2 semesters.

Semester 3: Course work and approved reading lists.

Semester 4: Course work and intensive preparation for comprehensive examinations.

Semester 5: Comprehensive examinations.

Semester 6: Approved prospectus.

Semester 7: Dissertation.

Semester 8: Dissertation.

Sociology as a Secondary Emphasis in Another Ph.D. Degree Program. A student who is enrolled in another Ph.D. degree program and who wishes to declare sociology as a secondary area must submit to the director of graduate studies a written request which includes the following: a plan of course work, a personal reading list, and an overall program statement indicating the relationship of the area in sociology to the student's total program.

Interdisciplinary Ph.D. Degree Program in Sociology. Students who have been admitted to the Ph.D. degree program in sociology, and who wish to develop an interdisciplinary program, should review the guidelines set forth by the Graduate School. The graduate dean approves interdisciplinary Ph.D. degree programs only when they bear the endorsement of a department that offers a Ph.D. degree program. A student who wishes to apply for an interdisciplinary program in which sociology will be the sponsoring department, should understand that the program of study must include substantial involvement in sociology courses and seminars, and that the department may require the student to meet other requirements similar to those established for the Ph.D. degree program in sociology.

Courses (SOC)

406-4 Social Change. Theories and problems of social change; their application, with emphasis on the modern industrial period.

415-3 Logic of the Social Sciences. (See Philosophy 415.)

423-4 Sociology of Gender. (Same as Women's Studies 442.) Examines social science theory and research on gender issues and contemporary roles of men and women. The impact of gender on social life is examined on the micro level, in work and family roles, in social institutions, and at the global, cross-cultural level.

424-4 Social Movements and Collective Behavior. A sociological analysis of the behavior of collectivities in uninstitutionalized settings; crowds, masses, publics, and social movements will be examined with relation to their social and cultural backgrounds, forms of expression and organization and their functions in society.

426-4 Social Factors in Personality and Adjustment. (Same as Psychology 464) Review of selected theoretical orientations and research traditions in social psychology. Comparison of different theoretical and methodological approaches — symbolic interaction, role theory, developmental and social psychology, theories of attitude or-

ganization and change, studies of belief and value systems, theories of socialization.

435-4 Social Inequality. Discussion of theories and evidence pertaining to the socio-structural causes and consequences of inequality based on social class, prestige, power, gender, wealth and income.

437-4 Sociology of Development. Survey of sociological theories of development including modernization, dependency, and world-system perspectives. Problem areas of development are examined: economic growth, state structures, multinational corporations, labor force, education, migration, population and women's roles.

438-4 Sociology of Ethnic Relations in World Perspective. Examines theories, concepts and research on the structure of ethnic relations and ethnic problems in contemporary societies in major world regions. Assimilationist, pluralist, secessionist, and militant types of ethnic and racial group relations are covered in selected societies. Designed for students with advanced interest in comparative ethnic relations. Prerequisite: GEB 215 is recommended.

450-4 Social Thought. A survey of Western social thought from the ancient world to the found-

ing of the modern social sciences in the 19th century.

460-4 Sociology of Medicine. Examination of the sociological factors involved in health and illness, the role of medicine in society, the organization of medical care and health institutions in the United States and the prospects for sociological research in this area.

465-4 Sociology of Aging. The adult life cycle from a sociological perspective, with emphasis on the later stages of adulthood. Special topics on aging include demographic aspects, family interaction, ethnicity and cross-cultural trends.

471-4 Introduction to Social Demography. Survey of concepts, theories, and techniques of population analysis; contemporary trends and patterns in composition, growth, fertility, mortality and migration. Emphasis is on relationship between population and social, economic, and political factors.

473-4 Juvenile Delinquency. (Same as Administration of Justice 473.) Nature of sociological theories of delinquency; analytical skills in studying the delinquent offenders; systematic assessment of efforts at prevention, control and rehabilitation in light of theoretical perspectives. Prerequisite: 6 hours of social/behavioral science recommended.

474-4 Sociology of Education. Methods, principles and data of sociology applied to the educational situation; relation of education to other institutions and groups.

475-4 Political Sociology. (Same as Political Science 419.) An examination of the nature and function of power in social systems at both the macro- and micro-sociological levels of analysis, the social bases of power and politics; and various formal and informal power structures; the chief focus will be on American society.

476-4 Politics and Religion in Comparative Perspective. Examination of the interaction between politics and religion in the United States, with a comparative look at other nations and global regions. Consideration given to politics and religion as cultural and institutional systems, and to the impact of each upon the other.

484-3 Correctional Institutions. (Same as Administration of Justice 484.) Examination of the roles, purposes, structures and functioning of institutional corrections within the U.S. Emphasis is placed on understanding the philosophies, elements, structures and programs that shape current institution operations and their impacts on offenders, staff and the community. Prerequisite: Administration of Justice 201, 290, 316 or consent of instructor.

501-4 Classical Sociological Theory. A systematic survey of sociological theory with the focus on 19th and early 20th-century sociological thought. An in-depth examination of a selected number of thinkers whose work laid the foundation for major schools of contemporary sociology. Students are expected to be familiar with the fundamentals of sociological analysis.

502-4 Contemporary Sociological Theory. A survey of major 20th-century theoretical orientations in sociology with emphasis on their differing modes of conceptualization and alternative research programs. Students are expected to be familiar with the classics of sociological thought.

506-4 Seminar on Contemporary Sociological Theory. Recent trends in sociological theory; current approaches to the construction and application of theoretical models and their relations to empirical research. Prerequisite: 501 or consent of instructor.

512-4 Sociological Research. An overview of sociological research methods including survey, quantitative, comparative-historical and ethnographic techniques of research. Special attention will be given to research design and implementation. Students will do one or more limited research projects and will write reports on the projects.

514-4 Qualitative Methodology. Focus on research strategies involving the systematic exploration, documentation and analytic description of social settings, interactions, meanings, lifeworlds and texts. Includes discussion of field observation, depth interviewing, oral histories/narratives, case studies, biographies and life histories, focus group interviewing, content analysis of written and visual data, historical/archival investigations, among other approaches.

521-4 Seminar in Social Psychology. In-depth examination of specific theoretical systems or substantive problems in social psychology. Students wishing specific information on the topic of the seminar should consult with the instructor for more detail. Prerequisite: 426 or consent of instructor.

526-8 (4,4) Quantitative Methods in Sociology. (a) Linear causal models as a tool in theory and research. Central tendency, variation, covariation and correlation. Bivariate and multivariate regression models. Path analysis and related techniques. Bivariate and multivariate statistics for nominal and ordinal measures. (b) Application of linear models. Linear models of measurement error, reliability and validity. Models of reciprocal causation feedback and control. The identification problem. Must be taken in a, b sequence. Prerequisite: graduate standing.

530-2 to 12 (2 to 4 per topic) Topical Seminar in Sociology. Content varies with interests of instructor and students. Prerequisite: consent of instructor.

533-4 Seminar in Social Stratification. Comparative study of power, social class, and status; conceptions of social structure and measurement techniques; explanations of social and occupational mobility; institutions and differential life-changes.

534-4 Seminar in Social Change. Overview of prevailing theories, research, and issues in social change. These include social and economic change in capitalism; modernization development and underdevelopment in the world system; gender; race and ethnic relations; class relations and labor markets; social and revolutionary movements.

539-4 Seminar in Complex Organizations. Overview of theories, research, and prevailing issues of complex organizations. These will include the power structure of the business community, emergence and structure of the bureaucratic organization, bases of authority, systems of formal and informal relations, unanticipated consequences of organizational structure, labor relations, total institutions and social movements as organizations.

542-4 Seminar on the Family. Overview of the theoretical approaches, substantive issues, and techniques of research and measurement in the study of American family life. Approaches include structural-functionalism, conflict theory, and the feminist critique. Among the substantive topics are family roles and relationships, kinship, relationships of the family to other institutions and family change.

543-4 Seminar on Comparative Family Systems. Analysis of cross-cultural and historical variation in family structure. Methods and sources of information for research on family structure.

544-4 Sociology of Gender. Examines major theories, themes and research methods on the intersection of gender, race, class and sexuality. Topics may include: construction of gender, race, class and sexual identities; work; social movements; intersection of family and work; parenting and reproduction; historical and cross-national dimensions.

550-4 Seminar in Social Problems. Theoretical perspectives and empirical findings on the emergence and evolution of social problems. Examination of institutional responses and formation of social policy.

551-4 Sociology of Religion. Theoretical and empirical study of the origin, location and function of religious ideas and institutions in society.

552-4 Seminar in Race and Ethnic Relations. Overview of theories, research and prevailing issues of race and ethnic relations in contemporary societies. Discussions will include world expansion during colonialism, political economy of minority groups, class and gender issues in the global development.

555-4 Social Movements and Collective Action. A seminar designed to survey the major so-

ciological approaches to social movements and collective action. Emphasis will be on movement culture, social movement organizations and the social environment in which collective action occurs.

562-4 Seminar in the Sociology of Deviance and Social Control. Critical analysis of sociological theories and methods used in the study of social deviance and control. Examination of social deviance such as suicide, mental illness, sexual variance, drug use and alcoholism.

572-4 Seminar in Criminology. Students will learn research methods appropriate to the student of crime within various theoretical schools of criminology. Particular attention will be paid to quantitative and qualitative approaches to symbolic interactionism, functionalism, social structural, ecological and control theories.

591-1 to 4 Individual Research—Supervised Research Projects. Open to graduate students with a major in sociology. Graded *S/U* only. Prerequisite: consent of instructor and departmental director of graduate studies.

596-1 to 8 Readings in Sociology. Supervised readings in selected subjects. Graded *S/U* only. Prerequisite: consent of instructor and departmental director of graduate studies.

600-1 to 32 (1 to 16 per semester) Dissertation. Prerequisite: consent of chair.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Special Education

E-mail: lviernum@siu.edu

COLLEGE OF EDUCATION

Bates, Paul, Professor, Ph.D., University of Wisconsin, 1978; 1978.

Casey, John P., Professor, *Emeritus*, Ed.D., Indiana University, 1963; 1964.

Cordoni, Barbara, Professor, Ed.D., Duke University, 1976; 1977.

Crowner, James, Professor, *Emeritus*, Ph.D., Michigan State University, 1960; 1966.

Ewing, Norma J., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1974; 1973.

Foley, Regina, Associate Professor, Ed.D., Northern Illinois University, 1989; 1990.

Hisama, Toshiaki, Associate Professor, *Emeritus*, Ph.D., University of Oregon, 1971; 1971.

Juul, Kristen, Professor, *Emeritus*, Ph.D., Wayne State University, 1953; 1970.

Miller, Sidney, Professor, Ph.D., Pennsylvania State University, 1974; 1978.

Morgan, Howard, Professor, *Emeritus*, Ed.D., Wayne State University, 1962; 1969.

Mundschenk, Nancy, Assistant Professor, Ph.D., University of Iowa, 1992; 1992.

Teska, James A., Associate Professor, Ph.D., University of Illinois, 1969; 1973.

The Department of Educational Psychology and Special Education offers programs leading to the Master of Science and Doctor of Philosophy degree in special education.

Master of Science in Education degree

In the master's degree program, which requires a minimum of 30 semester hours for completion, 6 emphases are offered. All are designed for those who have attained an undergraduate grade point average of at least 2.7 on a 4 point

scale. Selected emphases may require prior certification in one or more areas of special education. Students desiring entry into the program and lacking prerequisites may complete the necessary requirements in conjunction with their program. Applicants with grade point averages less than 2.7 may at the discretion of the departmental faculty be admitted conditionally. They may also be required to complete all or a part of the Graduate Record Examination or Miller's Analogy and to submit the results as a part of their application to the department.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

There are 6 emphases open to those seeking a master's degree in special education: (1) early childhood special education, (2) resource teacher of the mildly handicapped, (3) teacher of the moderately and severely handicapped, (4) teacher of the severely behavior disordered, (5) teacher of the secondary aged mildly handicapped, (6) special education supervisor. Program requirements for each of these emphases include the following courses: SPED 500-3, 578-3, 580-3, and 599-3 to 6. In addition, they require completion of the courses specified in the explanation of each of the 6 areas of emphasis.

Early Childhood Special Education. Those selecting this emphasis will, as a rule, have completed certification requirements in one other area of special education or early childhood education. During the program students will complete requirements for state approval in Early Childhood Special Education. Upon completion of the program, students will be prepared to work either as educators or service providers in Early Childhood Special Education programs. In addition to core courses and courses required for approval (currently these are SPED 400, 412, CI 513, 518), students must complete SPED 405, 412, 505, 512, 594, and at least one of 513, 514, or 515.

Resource Teacher of the Mildly Handicapped. Students choosing this emphasis will ordinarily enter the program with certification in at least one area of special education and during the program will find another area of special education certification. Their training will prepare them to work as resource personnel in school programs where mildly handicapped children have been returned to regular classes. In addition to the core courses, they must complete: one of SPED 401-3, or 404-3; 511-3; at least one of 513-3, 514-3, or 515-2; and additional electives selected in cooperation with their graduate adviser to a total of at least 30 semester hours.

Teacher of the Moderately and Severely Handicapped. Students choosing this emphasis will ordinarily have been certified in the area of trainable-severely/profoundly handicapped or behavior disorders, and during their master's degree program will be pursuing an advanced degree of knowledge and expertise. However, persons without a teaching certification are also admitted to this degree program but must complete all course deficiencies. The major objective of this program is to prepare educators to apply systematic instruction technology to the learning and behavioral problems of moderately and severely handicapped persons so that they might function as fully as possible in community life. After completion of this program, graduates will be prepared to directly teach or supervise educational efforts in school, community, domestic, and vocational settings. Program applicants may declare an emphasis in severe behavior disorders or moderate/severe/profound mental retardation. In addition to the core course requirements, students must complete characteristics and methods deficiencies, SPED 550-3, and additional electives selected in cooperation with

their graduate adviser. For a student choosing a joint emphasis in mental retardation and behavior disorders, specific departmental and nondepartmental electives may be designed from which the student must choose.

Teacher of Individuals Labeled Severely Behavior Disordered. Students choosing this emphasis will ordinarily have been certified in the area of behavior disorders, and during their master's degree program will be pursuing an advanced level of knowledge and expertise. Persons without a teaching certificate are also admitted to this degree program, but must complete all course deficiencies. The major objective of this program is to prepare educators to apply systematic instruction technology to the learning and behavioral problems of severely handicapped persons so that they might function as full as possible in community life. After completion of this program, graduates will be prepared to directly teach or supervise educational efforts in school, community, domestic, and vocational settings.

In addition to the core course requirements, students must complete characteristics and methods deficiencies, SPED 501-3; SPED 516-3; 550-3; and additional electives selected in cooperation with their graduate adviser. For a student choosing a joint emphasis in mental retardation and behavior disorders, specific departmental and nondepartmental electives may be designated from which the student must choose.

Special Education Supervisor. Students choosing this emphasis will enter the program with certification in at least one area of special education and a minimum of 2 years teaching experience in their area of certification. Upon successful completion of the program, the students will be eligible for supervisory certification in the special education area of teaching experience. The program has as its purpose the training of effective instructional leaders. In addition to the core courses, they must complete: EAHE 501-3, 503-3, 517-3 or 519-3, 511-3 or C&I 531-3 or C&I 571-3, SPED 513-3, 514-3, and additional electives selected in cooperation with their graduate adviser to a total of at least 32 semester hours.

Research requirements for all master's program are as follows:

1. The student must successfully complete SPED 500-3, and then SPED 599-2 to 6 during which the thesis is completed.
2. The student must successfully defend the thesis in an oral examination conducted by the student's committee chair and 2 additional committee members.

A comprehensive examination over the field of special education is also required and conducted by the student's committee chair and 2 additional committee members.

All full-time graduate students in the department may be required to work a maximum of 5 hours per week in departmental activities as a part of their professional development.

Doctor of Philosophy Degree in Education

The Department of Educational Psychology and Special Education participates in the doctoral program in education with a concentration in special education. Inquiries regarding application should be directed to the chair. See the description of the Ph.D. degree in education.

Courses (SPED)

400-3 Introduction to Special Education. An overview of characteristics of all types of exceptional children and youth including physical, mental, emotional and social traits. The course also covers the effects of disabling conditions in learning situations, and an overview of the his-

tory of special education including legislation and litigation.

401-3 Characteristics of Children and Youth Labeled Behavior Disordered. Diagnosis, screening, classroom management, placement considerations, goals and the effective use of an-

cillary services for individuals who experience emotional disturbance and/or social adjustment problems. Emphasis on the understanding of maladaptive behavior through principle of learning and behavior. Prerequisite: 400 or concurrent enrollment or consent of department chair.

402-3 Characteristics of Children and Youth Labeled Mentally Retarded. Emphasizes a developmental approach to understanding and dealing with children who have mildly and moderately reduced mental abilities. Considers historical, theoretical and practical factors pertinent to mental retardation. Prerequisite: 400 or concurrent enrollment or consent of department chair.

403-3 Characteristics of Children and Youth labeled Gifted. Designed to help teachers in the identification of and programming for children labeled gifted and talented. Prerequisite: 400 or concurrent enrollment or consent of department chair.

404-3 Characteristics of Children and Youth Labeled Learning Disabled. Behavioral, emotional, physical and learning characteristics of children and youth, with learning disabilities. Emphasis on receptive and expressive modalities for learning; theories dealing with causes and management. Prerequisite: 400 or concurrent enrollment or consent of department chair.

405-3 Introduction to Early Childhood Special Education: Infants, Toddlers and Preschoolers with Special Needs and Families. This course presents an overview of Early Childhood Special Education including typical and atypical early development, federal and state legislation, goal setting, IEP and IFSPs, working with families, service delivery, case-management, curriculum methods and procedures for enhancing development in young children with special needs. Prerequisite: 400, concurrent enrollment, or consent of instructor.

406-3 Characteristics of Children and Youth with Moderate and Severe Disabilities. Presents historical, theoretical and research developments in service delivery for individuals of all ages (0-21) with severe disabilities. Provides the basic developmental, instructional and curricular background essential for prospective educators. Emphasizes a behavioral approach. Thirty hours of observation or equivalent applied experience is required.

408-3 Integrating Children and Youth with Disabilities in Normalized Environments. For regular education and related service personnel who provide services for children and youth with a disability. This course focuses on providing an understanding of essential characteristics and methods required to provide an appropriate education for students with disabilities.

409-1 to 6 Cross-Cultural Studies. Seminar and/or directed independent study concerned with socio-cultural variables affecting the educational needs of children and youth with a disability. Prerequisite: 400 or consent of instructor and department chair.

411-4 Assessment in Special Education. Course covers general assessment information, intelligence and academic norm-referenced test, informal inventories and adaptive behavior and rating scales. A laboratory fee is required to cover

the cost of materials. Prerequisite: 400; one of 401, 402 or 404; or consent of department chair.

412-3 Introduction to Assessment and Curriculum Methods in Early Childhood Special Education. This course presents and introduction to child and family assessment and the development of child and family goals in Early Childhood Special Education. Topics will include types of assessment commonly used, rationale for assessment, methods of assessment, reporting assessment results, writing child and family goals, and curricula to meet child and family goals. A fee for testing materials is required. Prerequisite: 400, concurrent enrollment or consent of instructor.

417-3 Methods and Materials for Teaching Children and Youth Labeled Behavior Disordered. Psychoeducational procedures used in teaching the children and youth labeled behavior disordered. Includes field trips, meetings with parents and visits by resource persons from schools and agencies. Prerequisite: 400, 401.

418-3 Methods and Materials for Teaching Children and Youth Labeled Mildly Retarded. Psychoeducational strategies used in teaching the children and youth with mild mental retardation. Prerequisite: 400, 402.

419-3 Methods and Materials for Teaching Children and Youth Labeled Learning Disabled. Psychoeducational strategies used in teaching children and youth labeled learning disabled. Prerequisite: 400, 404.

421-3 Methods and Materials for Teaching Children and Youth Labeled Moderately and Severely Disabled. Emphasizes a behavioral approach (i.e., systematic instruction) in teaching young students with severe disabilities (e.g., moderate MR, severe MR, profound MR, multiple handicapped, autistic). Systematic instruction is discussed in relation to applications across various curriculum domains. Each student must have access to working with students labeled moderately and severely disabled during the semester. All students are to develop and implement an instructional program during the course of the semester. Prerequisite: 400, 406.

423-3 General Procedures in Special Education. Presents key provisions of Public Law 94-142 and subsequent amendments, including Individualized Education Programs (IEPS). Course content also includes principles of behavior management effective for use in the instruction of students with special needs. Prerequisite: 400; and one of 401, 402, 403 or 404; or consent of department chair.

425-3 Home-School Coordination in Special Education. Cover techniques used in parent interviews, conferences and referrals by school personnel; due process and procedural safeguards for parents of children and youth with disabilities. Prerequisite: 400 or consent of department chair.

430-3 Secondary Programming for Students Labeled Mildly Disabled. Deals with modifications of and additions to school programs to ensure that they are appropriate to the needs of adolescents labeled mildly disabled. Includes detailed coverage of joint work-study programs as preparation for vocational adequacy, and addition of remedial and compensatory program models. Prerequisite: 400 and one of 401, 402, 403 or 404.

431-2 Work-Study Programs for Adolescents Labeled Severely Disabled. Deals with program offerings in public school special education programs designed to prepare adolescents labeled severely disabled for maximum vocational adequacy. Prerequisite: 400 and one of 401, 402, 404 or 406.

500-3 Special Education Research Problems. Research design and methodology in special education. Prerequisite: consent of instructor.

501-3 Methods and Materials for Persons with Severe Behavior Challenges. Deals with methods, materials and instructional management practices common to the instruction and management of student experiencing severe behavioral challenges in the schools and in residential settings.

503-3 Educational Program Delivery for Gifted and Talented Students. Planning implementation and evaluation of differential educational programs for gifted and talented students. Reviews historical through modern day approaches to the systematic delivery of educational services to exceptional populations. Evaluation methods for the expansion and refinement of gifted programming are planned. Prerequisite: 403.

505-3 Organizing and Implementing Early Childhood Special Education Programs. This course presents the philosophy and current best practices involved in the development and maintenance of Early Childhood Special Education programs. Content will include models of teaming and working with children and adults, legal and ethical issues, interagency coordination, transition, multicultural concerns, parent support and involvement, integration, program evaluation and supervision. Prerequisite: 400, 405, concurrent enrollment and using ECSE literature as a resource program.

511A-3 Advanced Assessment and Remedial Planning in Special Education. Administration and interpretation of typical instruments used to gain information to be used in remedial planning for children in special education programs. Designed to provide students with thorough knowledge of testing procedures, this course will include supervised practicum in testing and development of remedial programs. Prerequisite: 411.

511B-3 Advanced Remediation in Special Education. Designed to provide the graduate student with experience in designing and implementing a remedial program. Prerequisite: 511A.

512-3 Advanced Child and Family Assessment, Curriculum Methods and Evaluation in Early Childhood Special Education. This course presents advanced coursework and practical experience in child and family assessment, development and selection of curricula and evaluation in Early Childhood Special Education. Students will review current assessment, and curricula packages, conduct evaluations, and write assessment reports. Practical experience will be an integral part of this course. Prerequisite: 400, 405, 412, or concurrent enrollment, and consent of instructor and chair.

513-3 Organization, Administration, and Supervision in Special Education. Emphasis upon the functions, underlying principles and

cautions to be observed in the organization and administration of special education. The selecting and training of teachers, problems of supervision, special equipment, transportation, cooperating agencies and legal aspects of the problem. Prerequisite: 400 and consent.

514-3 Simulation of Administrative Tasks in Special Education. Development of skills required of special education administrators and supervisors through the use of simulation materials focusing on developing administrative skills. Prerequisite: 400 and consent.

515-2 Itinerant and Resource Teaching in Special Education. The role, responsibilities, problems of the itinerant and resource teacher in special education. Alternate systems and models for providing educational experiences for children with disabilities. Review of the role and responsibilities of other ancillary school personnel. Prerequisite: consent of instructor.

516-3 Advanced Assessment for Educationally Handicapped Youth in Special Education. Administration and interpretation of typical instruments used to gain information to be used in program planning for adolescents in special education programs. Designed to provide potential secondary teachers with thorough knowledge of testing procedures, this course will include supervised practicum in testing and development of remedial programs. Prerequisite: 411.

517-2 The Atypical Child and Social Agencies. A survey of social agencies contributing to the welfare and care of exceptional children. Emphasis is given to services rendered and to method of contact and costs. Specialists invited to appear before the class. Prerequisite: 400 and consent.

518-1 to 6 Workshop in Special Education. Topical workshops centered on current practices and new developments in special education. Designed to promote better understanding of the psychological and educational problems of exceptional children. Open to graduate students majoring in education and related fields. Prerequisite: 400 and consent of instructor and department chair.

519-3 Career Development Opportunities for Educationally Handicapped Youth. This course is designed to prepare special educators to understand the career needs of the educationally handicapped youth and the procedures for developing appropriate career services for such students. Prerequisite: 430.

550-3 Behavior Management of Exceptional Children and Youth. Describes assessment, implementation, and monitoring procedures involved with the use of behavior change techniques in special education programming. Emphasis will be placed on the actual implementation of behavior change techniques with handicapped school aged students in public school settings. Prerequisite: concurrent enrollment in 594 and Rehabilitation 406 or consent of instructor.

560-2 Inservice Delivery. Covers theoretical and practical aspects of inservice delivery/staff development. Special focus on organizing inservice programs, delivery techniques, consultative skills development, select inservice models, needs assessment and evaluative techniques. Prerequisite:

site: Curriculum and Instruction 483 or consent of instructor.

578-3 Legal Framework for Special Education Services. Covers PL 94-142 (Education for all Handicapped Children Act) and Section 504: The Rehabilitation Act of 1973. Emphasis on both pieces of legislation with respect to provision of educational services for handicapped children and youth/young adults. Prerequisite: 400, or concurrent enrollment, or consent of instructor.

580-3 Master's Seminar: Issues and Trends in Special Education. Analysis of research, trends, and programs in the education of handicapped children. Open to graduate students in special education only. Prerequisite: 400, consent of instructor and department chair.

582-3 Post-Master's Seminar: Theories and Models in Special Education. Critical discussion of eight major intervention models used historically and currently with handicapped children in educational settings. Prerequisite: consent of instructor.

583-3 Post-Master's Seminar: Program Coordination in Special Education. Analysis of organizational principles and practices required for the creation and maintenance of programs to meet the needs of persons who are handicapped and require specialized educational programs within the school setting. Prerequisite: consent of instructor.

584-3 Doctoral Seminar: Research in Special Education. An analysis of purposes, approaches, design, methodology, and applications of experimental studies of handicapping conditions, as they relate to special education. Prerequisite: 582, 583.

585-3 Doctoral Seminar: Evaluation in Special Education. An analysis of the purposes, approaches, design, methodology and applications of evaluative studies in special education. Prerequisite: 582, 583.

586-1 to 4 (1,1,1,1) Proseminar in Special Education. A topical seminar providing for the systematic discussion of current research in the field of special education. Specific content is determined by participating faculty and students, relative to current faculty research and dissertations in progress within the department. Doctoral students will register for a total of four credit hours, one per semester, after which they will audit the course during the pursuit of their dissertation.

Master's students admitted with consent of adviser and department chair.

590-1 to 6 Readings in Special Education. Study of a highly specific problem area in the education of exceptional children. Open only to graduate students. Graded *S/U* only. Prerequisite: 400, consent of instructor.

591-1 to 6 Independent Investigation. A field study for graduate students. Conducted in a school system where full cooperation is extended. The study will involve selection of a problem, surveying pertinent literature, development of experimental design and procedures, recording results and appropriate interpretations and summaries. Prerequisite: consent of instructor.

594-1 to 6 Practicum in Special Education. Supervised experience in school or institutional programs for atypical children. Special research project. Open to graduate students only. Prerequisite: consent of instructor and department chair.

595-1 to 12 (1 to 6) Internship. The doctoral internship is a required experience. Internship hours do not apply to minimum needed for graduation. Each student shall engage in specialized service areas within a school system, university, state office, federal office, or private agency. Internship assignments include: (a) Research and applied studies; (b) Evaluation; (c) Administration; (d) University teaching; (e) Program planning and management; (f) Supervision; and (g) Specialized delivery systems. Interns will participate in regularly scheduled on-campus or on-site seminars with the university and field internship supervisors.

599-1 to 6 Thesis. Independent hours to be taken under the supervision of the student's Master's degree chair for the purpose of conducting and writing the Master's thesis. Prerequisite: consent of instructor.

600-1 to 32 (1 to 12 per semester) Dissertation. Prerequisite: consent of chair.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Speech Communication

E-mail: spcmgrad@siucvmb.siu.edu

COLLEGE OF LIBERAL ARTS

Breniman, Lester R., Associate Professor, *Emeritus*, Ph.D., Ohio State University, 1953; 1954.

Crow, Bryan, Associate Professor, Ph.D., University of Iowa, 1982; 1981. Interpersonal communication, conversation analysis, media studies.

Daughton, Suzanne, Assistant Professor, Ph.D., University of Texas-Austin, 1991; 1990. Rhetorical theory and criticism.

Ekachai, Daradirek, Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1991;

1990. Public relations, intercultural communication.

French, Kathryn, Assistant Professor, Ph.D., University of Southern California, 1989; 1990. Conversation analysis, interpersonal communication, and health communication.

Glenn, Phillip, Associate Professor, Ph.D., University of Texas-Austin, 1987; 1989. Conversation analysis, interpersonal communication, laughter, play, conversational performance, conflict.

Hetherington, Laurel T., Assistant Professor, Ph.D., University of Iowa, 1981; 1995. Interpersonal communication, public relations, communication management.

Higgerson, Mary Lou, Associate Professor, Ph.D., University of Kansas, 1974; 1973. Organizational communication and public relations.

Hinchcliff-Pelias, Mary, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1982; 1983. Communication and instruction, research methods, quantitative, special populations and communication instruction.

Kleinau, Marion L., Professor, *Emeritus*, Ph.D., University of Wisconsin, 1961; 1959.

Kleinau, Marvin D., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1977; 1963.

Langsdorf, Lenore, Professor, Ph.D., State University of New York at Stonybrook, 1977; 1990. Communication, rhetorical, argumentation, and social-political theory.

Lanigan, Richard L., Professor, Ph.D., Southern Illinois University at Carbondale, 1969; 1974. Continental-contemporary rhetoric, semiotics, phenomenology of communication, intercultural communication.

McOmber, James, Assistant Professor, Ph.D., University of Iowa, 1991; 1994. Rhetorical theory, public address, rhetoric of science, psychoanalysis.

Pace, Thomas J., Professor, *Emeritus*, Ph.D., University of Denver, 1957; 1965.

Parkinson, Michael, Associate Professor, Ph.D., University of Oklahoma, 1978, J.D., Southern Illinois University at Carbondale, 1987; 1978. Public relations and legal communication.

Pelias, Ronald, Professor, Ph.D., University of Illinois, 1979; 1981. Performance methodologies and criticism.

Pineau, Elyse, Assistant Professor, Ph.D., Northwestern University, 1990; 1990. Women's autobiography and personal narratives in performance.

Potter, David J., Professor, *Emeritus*, Ph.D., Columbia University, 1943; 1960.

Smith, William D., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1964; 1961.

Stucky, Nathan, Assistant Professor, Ph.D., University of Texas-Austin, 1988; 1990. Performance studies, staging literature, conversation analysis, dramatic literature.

Van Oosting, James, Professor and *Chair*, Ph.D., Northwestern University, 1981; 1981. Performance studies, creative writing, children's literature.

At a time when many speech communication departments are staffed by individuals representing the same school of thought, our department has a healthy diversity of outlooks and approaches. Nevertheless our diversity has not prevented the development of an exceptionally supportive interpersonal climate. While we argue about a great many issues, we are committed as colleagues to effective teaching and productive scholarship. We believe that our students share these commitments, and we are most anxious to recruit students who want to study in such an environment.

Our facilities include a superior laboratory for oral performance studies, the Calipre stage, computer terminal laboratory room, video tape laboratory, library, and research carrels all housed in the department. We offer graduate assistants the opportunity for independent teaching experiences as well as the usual support duties as teaching and research assistants. All graduate students are eligible for training experiences through internships in business, governmental, and political organizations.

Financial Assistance

There are several forms of financial assistance available to graduate students in the Department of Speech Communication. First, there are graduate fellowships awarded on the basis of superior scholarship, which do not require any departmental service. Second, there are several special fellowships offered annually to students who show promise of success in graduate studies even though their academic records have been only average because of economic or social disadvantages. These special fellowships have no service requirements. Third, there are graduate assistantships available which require up to 20 hours per week of service in teaching or research. Finally, there are dissertation research awards for students in their final year of work toward the Ph.D. degree.

The stipends for the above awards currently range from \$5976 to \$6372 for the 9 month academic year depending on the level of graduate study of the appointee and the type of appointment. These rates may be increased for the forthcoming year. All the appointments, fellowships, and assistantships, also include

a waiver of tuition (both in-state and out-of-state) for the student, although the student is responsible for student fees. Students who hold assistantship appointments for 2 consecutive semesters also receive a tuition waiver for the following summer session, and a limited number of appointments pay stipends for summer assignments as well.

Applications for financial assistance may be obtained by writing: Director of Graduate Studies, Department of Speech Communication, Southern Illinois University at Carbondale, Carbondale, Illinois 62901-6605. Completed applications for fellowships should be received by February 1 for appointment during the subsequent fall semester. Applications for fall semester assistantships should be received by March 1.

The Department of Speech Communication offers 3 graduate programs of instruction and research in the discipline of human communication leading respectively to the Master of Arts, Master of Science, and Doctor of Philosophy degrees.

Curriculum. The graduate faculty of the department offers curriculum areas in communication education, interpersonal communication, philosophy of communication, performance studies, and (at the doctoral level) theater as well as course work in intercultural communication (including semiotics), organizational communication and public relations, political communication, and rhetoric and public address.

Admissions. Applicants must meet the minimum requirements of the Graduate School and should have completed a minimum of 24 quarter or 16 semester credit hours in speech or related subjects. A program for remedying deficiencies in background can be arranged upon petition to the graduate committee of the Department of Speech Communication. In some instances applicants will be accepted for direct entry from the baccalaureate to the doctoral program when the graduate committee identifies high achievement and potential in the applicant's undergraduate work. Master's degree students seeking the Ph.D. degree should make application when they are within 16 hours of completing the degree.

Application for admission to graduate studies in speech communication should be directed to the director of graduate studies of the Department of Speech Communication. The GRE Aptitude Test is not required as a condition for admission but is strongly recommended. In some cases it may be requested to support application materials. Except for persons from English-speaking countries, international students are required by the department to have a TOEFL score of 600 or higher for admission. In addition to materials sent to the Graduate School, each applicant should submit to the Department of Speech Communication three recommendations from former instructors and an application form indicating professional and personal objectives. In addition, applicants for the Ph.D. degree program may be requested to furnish a thesis or research paper as evidence of research and writing ability.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Acceptance for graduate study in speech communication and subsequent continuation in the graduate program is determined by the graduate committee of the Department of Speech Communication. Students who are awarded graduate assistantships to provide assistance in the instruction of the department are required to take SPCH 539 if they have not had previous teaching experience at the secondary, college, or university level; the course is strongly recommended for all students planning careers in university teaching.

Research Style. In most cases graduate students are required to write a term research paper for each course taken; and, depending on the degree program, each student is required to write a research report, thesis, or dissertation. In all cases the writing must conform to the latest edition of *The MLA Style Manual* or the *APA Publication Manual*, depending on the nature of the research. In all cases the writing must conform to the current edition of the *Graduate School Guidelines for the Preparation of Research Reports, Theses, and Dissertations*.

Master's Degree Programs

A minimum of 30 semester credit hours is required for the M.A. or M.S. degree. At least 15 of these hours must be at the 500 level. A student who completes only the minimum of 30 hours of work may devote no more than 9 hours to work outside the Department of Speech Communication. However, a student may petition the graduate committee for a program to include 15 hours outside the department. Such outside work must be germane to one of the departmental curriculum areas for purposes of research and examination. Competence in one foreign language is required for the M.A. degree. Competence may be demonstrated by (1) E.T.S. examination, (2) achieving a grade of *B* or *A* in FR 488, GER 488, RUSS 488, or SPAN 488, or (3) achieving a passing grade in other approved foreign language courses on campus, a list of which is available in the department office. Current standards for passing the E.T.S. examination in French, German, Russian, or Spanish are available from the director of graduate studies.

A faculty adviser is named for the individual student before the end of the first semester. The faculty adviser and the student will plan the program of study. The program must consist of course work in at least 3 curriculum areas. In order to satisfy a given area of study, a student must complete at least 6 semester hours of work in that area. A course used for one curriculum area may not be counted toward another area. A comprehensive written examination is taken during the last semester of study.

The requirements for the master's degree may be met by either of the following plans chosen by the student in consultation with the adviser.

Plan 1: Thesis. Each student must complete a minimum of 30 semester credit hours, with no more than 6 hours or fewer than 3 hours of thesis credit in SPCH 599 counted toward the 30 hour minimum. In addition, the student must register for at least one semester hour of credit in SPCH 599 during any academic term in which the services of any faculty member are utilized in the supervision of or consultation concerning the thesis. If the student's reliance upon faculty assistance justifies, the director may require an appropriately greater number of semester hours in SPCH 599. The thesis is submitted to a committee of 3 members of the graduate faculty, at least 2 of whom must be from the Department of Speech Communication. The committee must approve the prospectus and will administer an oral examination over the thesis. Students are required to submit 2 copies of the thesis to the Graduate School, one copy to the Department of Speech Communication, and one copy to the thesis director.

Plan 2: Research Report. Each student must complete a minimum of 30 semester credit hours, with no more than 3 hours or fewer than 1 hour of research report credit in SPCH 595 counted toward the 30 hours minimum. A research report is submitted as evidence of research competence. This paper should be based on a special project or specific courses as recommended by an advisory committee composed of the student's adviser and one other member of the graduate faculty in the Department of Speech Communication selected by the student and the adviser. This advisory committee must approve the research paper before it is submitted to the graduate committee and, then, to the Graduate School. One copy of the research report is submitted to the Graduate School,

one copy to the Department of Speech Communication, and one copy to the adviser.

The subject of the thesis or research report must be in one of the curriculum areas chosen by the student. A student must have a graduate grade point average of 3.25 in order to be eligible for the master's degree.

Doctor of Philosophy Degree

A minimum of 42 semester credit hours of course work plus 9 hours of methodology (tool) courses beyond the master's degree and 24 semester credit hours of dissertation work are required for the Ph.D. degree. Course work outside the department must be germane to one of the departmental curriculum areas for purposes of examination and dissertation research. Throughout the program of study, the student must maintain a 3.25 grade point average in all work taken. If the grade point average drops below the minimum, the student is placed on academic warning for the following two semesters.

During the last half of the second semester of course work, the student's progress shall be reviewed by the advisory committee to determine continuation, change, or termination of the program. The advisory committee for each student shall be responsible for assembling the necessary information (grades, recommendations, progress in curriculum areas, etc.) for consideration in reaching the above decision.

Advisory Committee. A 3 person advisory committee shall be established during the first semester of graduate study to plan the program of study with each student. The chair of the committee shall act as the primary adviser and sign the graduate course request form. This advisory committee is responsible for certifying to the graduate committee that the student has met all departmental requirements for admission to candidacy and has passed the Ph.D. preliminary examination.

The advisory committee and the student will plan the program of study. The program of study focuses on at least one curriculum area. All students are required to take SPCH 501, Introduction to Speech Communication Research and SPCH 510, Rhetoric and Communication. Also students must take a minimum of 9 hours of methodology courses prescribed by the chosen curriculum area. Students selecting theater as a curriculum area must take 18 hours of speech communication courses including SPCH 501 and 510.

Attendance is required at proseminars as part of professional development. Graduate students are encouraged to present their scholarly work.

Preliminary Examination. The student must pass a preliminary examination on each of the declared curriculum areas in the program of study. The preparation and administration of the examination are determined by the advisory committee in consultation with the student. The examination is taken near the end of the course work.

Dissertation. Each student must register for at least 24 semester hours of dissertation credit in SPCH 600 or SPCH 601 or THEA 600 or THEA 601. In addition, the student must register for at least one semester hour of credit in SPCH 600 or THEA 600 during any academic term in which the services of any faculty member are utilized in the supervision of or consultation concerning the dissertation. If the students' reliance upon faculty assistance justifies, they may be required by the dissertation adviser to register for an appropriately greater number of semester hours.

The dissertation director shall, upon consultation with the student, be responsible for setting up a dissertation committee, supervising the dissertation, and administering the final oral examination. The dissertation committee shall ap-

prove the dissertation prospectus and pass upon the completed dissertation and oral examination. Students are required to submit two copies of the dissertation to the Graduate School, one copy to the Department of Speech Communication, and one copy to the dissertation director.

Interdisciplinary Program. Students who have been admitted to the doctoral program in speech communication and who wish to develop an interdisciplinary program, should review the guidelines set forth by the Graduate School. The graduate dean approves interdisciplinary Ph.D. programs only when they bear the endorsement of the principal sponsoring department. A student who wishes to apply for an interdisciplinary program in which speech communication will be the principal sponsoring department should understand that the program of study must include substantial involvement with courses in speech communication and that the department may require the student to meet other requirements similar to those established for the doctoral program in speech communication.

Courses (SPCM)

401-3 Communication Theories and Models.

An introduction to theory construction and model utilization in communication research. Critical analysis of existing communication theories in the social sciences as a basis for generating new models. Emphasis on the heuristic nature and function of the language/speech act paradigm in communication studies. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for Speech Communication majors.

411-3 Rhetorical Criticism. Designed to develop the student's ability to criticize public discourse, including speeches, written works, and the mass media. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for Speech Communication majors.

421-3 to 9 (3,3,3) Studies in Public Address. Critical studies of speakers and issues relevant to social and political movements dominant in national and international affairs. A lecture, reading and discussion course. Students may repeat enrollment to a total of nine hours.

430-3 Speech in Elementary Schools. Survey of normal speech development with emphasis on the elementary school years. Concept of speech as skill basic to reading, writing and spelling. Psychological and sociological variables affecting language as it relates to school learning. Speech experiences supportive of the child's linguistic, intellectual and social development.

431-3 Speech in Secondary School. Philosophy of speech education, and effective teaching of speech through curricular and extra-curricular work. Prerequisite: twelve hours of speech and consent of instructor.

432-3 Secondary School Forensic Program. Designed to evaluate and plan the proper role of forensics in the secondary school and to prepare the students for their tasks as teachers and administrators in that program. Students enrolled as majors in speech communication with a specialization in communication education must complete this course before enrolling for student teaching. Not for graduate credit. Prerequisite: 325, GEC 200.

433-3 Children's Literature in Performance. Study of children's fiction and poetry through

analysis, creative drama, and performance, including solo and group work.

435-3 to 6 (3,3) Topics in Performance Studies. An exploration of advanced theories and techniques for performance studies. Topics vary and are announced in advance. Students may repeat enrollment in the course, since the topics change. Lecture, discussion, class projects.

440-3 Language Behavior. Study of linguistic approaches to speech communication based on behavioral determinants such as culture, history, speech community, value orientations, social perception and expression and the nature and function of interpersonal transaction. Prerequisite: 340 or consent of instructor.

441-3 Intercultural Communication. Application of semiotic and cultural theories to language behavior. Emphasis on speech communication as an approach to the study of intercultural communication. Prerequisite: 341 or consent of instructor.

442-3 Psychology of Human Communication. Nature, development, and functions of verbal and nonverbal behavior; application of psychology theories and research to the communication process in individuals and groups. Emphasis on the systemic nature of communicative behavior.

443-3 General Semantics. Formulations from the works of Alfred Korzybski and from neo-Korzybskian interpreters are presented. General semantics is discussed as an interdisciplinary approach to knowledge. Relationships are made to contemporary problems in human affairs.

444-3 Studies in Language Acquisition. Research in and theories of the development of verbal and nonverbal language with attention to the maturational process. Includes investigation of social, phonological, syntactical and semantic correlates of communication development. Appropriate for advanced students interested in working with or conducting research involving children.

445-3 Conversational Performance. Analysis of performance acts within everyday interaction: stories, jokes, laughter, teasing, etc. Application of theories of play, metacommunication and framing. Re-performance of recorded, transcribed conversations as method of exploring aesthetic di-

mensions of communication. Prerequisite: nine hours of Speech Communication courses or consent of instructor.

446-3 Sociology of Language Discourse and Signs. Introduction to sociological semiotics, especially structuralism and post-structuralism. Reference to French theorists such as Barthes, Baudrillard, Bourdieu, Certeau, Deleuze and Guattari, Greimas, Group Mu, Lacan, Lyotard and Perelman. Emphasis on the practice of discourse, language, and signs as a model for research in the human science of communicology.

447-3 Semiotic. (Same as Philosophy 422.) Introduction to Semiotic as the general theory of signs, including natural signs, signals and linguistic expressions. Concentration on contrasts and comparisons between language and more primitive types of signs.

451-3 Political Communication. (Same as Political Science 418.) A critical review of theory and research which relate to the influence of communication variables on political values, attitudes and behavior. Prerequisite: 358 or consent of instructor.

452-3 Interpersonal Communication and the Mass Media. A review, synthesis and analysis of communication theory and research which deals with the process, interactive nature of interpersonal and mass channels of communication. Prerequisite: 401 or consent of instructor.

460-3 Small Group Communication: Theory and Research. A critical examination of small group theory and research in speech communication. Emphasis is given to the development of principles of effective communication and decision-making in the small, task-oriented groups. Prerequisite: 261 or consent of instructor.

461-3 Laboratory in Interpersonal Communication I. Interpersonal communication is studied as human encounter. The philosophy and theoretical bases of existential phenomenological approaches to human communication are discussed. Projects are evolved by small groups that contribute to the understanding of human communication.

462-3 Laboratory in Interpersonal Communications II. Various theories of social and cultural change are explored. The role of interpersonal communication in the development of human consciousness is explicated. Projects are evolved by small groups that examine values and priorities of human nature and cultural nature.

463-3 Interpersonal Conflict. Study of sources, patterns and outcomes of conflict in interpersonal relationships. Emphasis on interactive, systems-level analysis of naturally-occurring conflict episodes. Practice in managing conflicts, reframing, negotiation and mediation. Prerequisite: for undergraduates, 262 or consent of instructor.

465-3 Philosophy of Language. (See Philosophy 425.)

471-3 Prose Fiction in Performance. Study of prose fiction through analysis and individual performance. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for Speech Communication majors. Prerequisite: 370 or consent of instructor.

472-3 Poetry in Performance. The study of poetic form through analysis and performance. Prerequisite: 370, GEC 200 or consent of instructor.

474-3 Staging Literature. Theory and practice of staging literature texts with emphasis on adaptation and directing. Prerequisite: 370 or 371 or consent of instructor.

475-3 to 6 (3,3) Production Texts and Contexts. Advanced study related to theoretical and practical issues in performance staging with special emphasis on textual production, scripting, social contexts and performance practices. May be repeated for a total of six hours. Prerequisite: six hours of performance studies courses or consent of instructor.

476-3 Writing as Performance. An examination of the practical and theoretical links between composition and performance. Lectures, reading and assignments focus on performance as a means and an end to creative writing. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for Speech Communication majors.

480-3 Dynamics of Organizational Communication. Introduction to interrelationships of communicative behavioral and attitudes with organizational policies, structures, outcomes. Uses case studies and role-plays to teach principles. Individual research into selected aspects of organizational communication. Prerequisite: 280, 442, or consent of instructor.

481-3 Public Relations Cases and Campaigns. Advanced course in public relations case analysis and campaign planning. Students critique public relations campaigns created by various profit, nonprofit and agency organizations. Students also design public relations campaigns from problem identification through evaluation stages. Satisfies the College of Liberal Arts Writing-across-the-Curriculum requirements. Prerequisite: 381 and 382 with a grade of C or better.

483-3 Studies in Organizational Communication. Study of communication systems and behaviors within organizations. Consideration of relevance of communication to management operations, employee morale, networks, superior-subordinate relations, production and organizational climates. Individual research into selected aspects of organizational communication. Prerequisite: 480 or consent of instructor.

490-1 to 6 Communication Practicum. A supervised experience using communication skills. Emphasis on the development of performance skills in the following areas: (a) Communication studies. (b) Performance activity. (c) Interpersonal communication. (d) Debate and forensic activity. (e) Political communication. (f) Organizational communication. (g) Instructional communication. May be repeated for credit. Undergraduates limited to a total of six hours and graduate students to three to be counted toward degree requirements.

492-2 to 8 Workshop in Performance Studies. Summer offering concentrating in specialized areas of performance studies. Prerequisite: 370 and GED 200 or consent of instructor.

493-3 to 9 (3,3,3) Special Topics in Communication. An exploration of selected current topics in communication arts and studies. Topics vary and are announced in advance; both students and faculty suggest ideas. Students may repeat enrollment in the course, as the topic varies.

501-3 Introduction to Speech Communication Research. Survey of research methods utilized in the discipline of speech communication. Discussion of these methods as they apply to the various subject matter typologies. Introduction to basic conventions of research investigation and reporting.

502-3 Seminar: Quantitative Communication Research. Review and analysis of types of quantitative research and methods of data collection most relevant to the study of human communication. Prerequisite: 501.

503-3 Communicology as a Human Science. Introduction to the human science approach (phenomenology) to theory construction in human communication. Examination of the modality conditions for evidence (actuality, possibility, necessity, sufficiency) and the corresponding logics (assert, problematic, apodictic, thematic) for qualitative research. Focus on the Abduction models of human communication and practice used by theorists such as Gregory Bateson, Paul Waltzlawick, Roman Jakobson, Charles S. Pierce, Maurice Merleau-Ponty and Michel Foucault.

504-3 Seminar: Empirical Phenomenological Communication Research. Review and analysis of the types of empirical phenomenological research and methods of capta/data collection relevant to the study of human communication. Prerequisite: 501 and 503.

505-3 Seminar: Semiotic Phenomenology and Critical-Cultural Research. Review, analysis, and application of eidetic and hermeneutic models for conducting interpretive research in the tradition of semiology and phenomenology. Focus on those qualitative approaches which use a critical-cultural context of investigation in the human sciences, especially communicology. Prerequisite: 503 and 504 or consent of instructor.

506-3 Ethnography of Communication. Survey of research literature and methods in the ethnography of communication, emphasizing description of communicative practices situated in particular cultural contexts. Course includes such topics as theoretical assumptions and genres of ethnographic writing.

510-3 Seminar: Rhetoric Theory. A survey of selected theories of rhetoric. Emphasis on major contributors of historical or contemporary importance.

513-3 to 9 (3,3,3) Studies in Rhetoric. An exploration of selected topics in the field of rhetoric. May be repeated with change of topic area. Topics announced prior to each offering. May be repeated up to nine hours.

515-3 to 9 (3,3,3) Communication and Gender. How communicative activity constitutes and sustains human beings as gendered. Emphasis on gaining familiarity with contemporary research on gendering from a particular perspective (e.g. ethnography, performance, phenomenology, quantitative methods, rhetorical criticism). May be repeated when perspective varies. Perspective announced prior to each offering.

526-3 Seminar: Studies in Persuasion. The study of persuasion in social-political contexts. Exploration of contemporary research and selected theories in persuasion. Examination of philosophical-ethical questions related to persuasion. Readings, research and discussions.

531-3 to 9 (3,3,3) Seminar: Speech Education. Advanced study of selected problems in speech communication instruction. Analysis of research problems and methodologies in speech pedagogy research. Topics may vary from year to year. Prerequisite: consent of instructor. May be repeated only if topic differs each time repeated.

539-3 Speech Communication at University Level. Analysis and practice of instructional methods. Focus on the development of instructional skills with specific applications to teaching the basic college speech communication course.

540-3 Seminar: Language, Culture, and Semiology. Examination of communication problems and research focusing on the relation among cultural values, communication behaviors in the speech community, and social exchange. Emphasis on the semantics and pragmatics of intercultural communication and social semiotic systems. Prerequisite: 440 or 441 or consent of instructor.

545-3 Seminar: Semiology and Semiotic Communication. Advanced study of sign, signal, and symbol systems in the phenomenology of communication. Systematic analysis of the meta-theory relationship between expression and perception as manifest in verbal and nonverbal communication systems. Emphasis on semiology as a communication theory in the human sciences. Some consideration of related theories such as structuralism, interspecies communication, human/machine communication and general systems theory. Prerequisite: 440 or 441 or consent of instructor.

546-3 Conversation Analysis: Pragmatics. (Same as Linguistics 546.) Study of the pragmatics of everyday conversation: sequential organization, topical coherence, speech act rules and functions, contextual frames, and background understandings. Emphasis on observational research methods and analysis of original data. Prerequisite: consent of instructor.

547-3 Conversation Analysis: Ethnomethodology. (Same as Linguistics 547) Descriptive study of sequential organization of interaction. Students read research literature and learn methods for transcription and analysis in the conversation analytic tradition. Topics include openings and closings, adjacency pair organization, turn taking, overlap, assessments, pre-sequences, repair, topic, nonvocal activities, response, laughter, storytelling, argument, play and institutional contexts. Prerequisite: consent of instructor.

551-3 Phenomenology Seminar I: French Communicology. A critical examination of dominant problematics, thematics, and rhetorics in communication theory and praxis developed as a human science (*science humaine de communicologie*) by such contemporary French theorists as Barthes, Bourdieu, Foucault, Merleau-Ponty, Perelman and Ricoeur. Prerequisite: 401 and 461 or consent of instructor.

552-3 to 9 (3,3,3) Phenomenology II: German Communicology. Ways of studying human communication which derive their impetus, orientation, or construal of questions and answers, theories and methods, from the German intellectual (philosophical and social-scientific) tradition. Focus on (a) Hermeneutic phenomenology, (b) Frankfurt School critical theory, and (c) Phenomenological sociology/ethnomethodology. May

be repeated with change of focus. Focus announced prior to each offering.

561-3 to 6 (3,3) Studies in Small Group Communication. Studies of group action, interaction and leadership designed to apply small group theory and communication theory. Emphasis on the nature of group communication as exemplified in the laboratory model or the discussion/conference model. Students may repeat enrollment to a total of six hours.

562-3 to 9 (3,3,3) Philosophy of Human Communication. (Same as Philosophy 562.) Study of selected topics in the philosophical study of communication. May be repeated with change in topic area. Topics announced prior to each offering.

563-3 Studies in Interpersonal Communication. An investigation of recent theories and empirical research concerning interpersonal communication. Emphasis will be placed on analyses of relational development, maintenance and change in the contexts of working relations, friendships and families. Both analytic and quantitative perspectives on interactional processes will be considered.

570-3 Performance Methodologies. The examination of performance methodologies for exploring human communication. Particular attention is given to generating and reporting performance knowledge. Prerequisite: nine hours of 400 level performance studies courses or consent of instructor.

571-3 History and Criticism in Performance Studies. A study of social and critical trends in performance studies with emphasis on their historical development. Prerequisite: nine hours of performance studies or consent of instructor.

572-3 Theory and Criticism in Performance Studies. A study of the theoretical trends in performance studies and literary criticism. Prerequisite: nine hours of performance studies or consent of instructor.

573-3 Performance Criticism. An examination of the theoretical and practical issues surrounding the evaluation of artistic performances for interpretation, rhetoric, theatre, journalism, film and television students interested in developing their critical skills. Prerequisite: consent of instructor.

574-3 to 6 (3,3) Studies in Interpretation. An exploration of selected current topics in the field of oral interpretation. May be repeated for a total of six hours. Prerequisite: twelve hours of interpretation or consent of instructor.

576-3 Performance Art. The study and creation of postmodern performance. Particular attention is given to performance artists in the theatrical tradition. Prerequisite: nine hours of performance studies or consent of instructor.

580-3 to 9 Issues in Organizational Communication and Public Relations. Advanced study and applications related to specific issues in (a) Organizational communication, (b) Public relations, and (c) Political communication. May be repeated with change of topic area. Topics announced prior to each offering. Prerequisite: consent of instructor.

593-1 to 3 Research Problems in Communication. Independent research study with a theoretical focus under the tutorial supervision of a member of the graduate faculty. Prerequisite: consent of instructor and departmental adviser.

595-1 to 3 Research Report. One to three hours required of all non-thesis students writing a research paper. Graded *S/U* or *DEF* only.

598-0 Proseminar in Human Communication. An open forum offered each semester for the systematic discussion of contemporary research in the field of communication arts and studies. Specific content is determined by participating faculty and students. Topics will usually be related to current faculty research or dissertations in progress in the department. Graded *S/U* only.

599-1 to 6 Thesis. Minimum of three hours to be counted toward a master's degree.

600-1 to 36 (1 to 12 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Teaching English to Speakers of Other Languages

(See Linguistics for program description.)

Telecommunications

E-mail: telecom@siu.edu

COLLEGE OF MASS COMMUNICATION AND MEDIA ARTS

Birk, Thomas A., Assistant Professor, M.A., University of Nebraska, Omaha, 1990; 1990. Sales and management.

Collette, Larry, Assistant Professor, Ph.D., Michigan State, 1992; 1991. Media industry, analysis, social effects and new technologies.

Dybvig, Homer E., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1970; 1961.

Foote, Joe S., Professor and Dean, *Mass Communication and Media Arts*, Ph.D., University of Texas at Austin, 1979; 1986. Political news and management.

Gher, Leo A., Assistant Professor, M.S., Southern Illinois University at Carbondale, 1980; 1983. Sales, management, and programming.

Hodgson, Scott, Associate Professor, M.S., Southern Illinois University at Carbondale, 1992; 1988. Television producing and directing, corporate media production, documentary, field and studio production.

Johnson, Phylis W., Assistant Professor, M.A., Texas A&M University, 1985; 1990. Radio production.

Kaye, Barbara K., Assistant Professor, Ph.D., Florida State University, 1994; 1994. Media effects, mass communication, theory, writing.

Keller, Kenneth R., Associate Professor, M.A., University of Illinois, 1966; 1984. Broadcast journalism, television news, broadcast reporting, documentary production, television field production.

Kim, Haeryon, Assistant Professor, Ph.D., University of Iowa, Iowa City, 1990; 1994. Broadcast law and policy, social effects.

McCray, Judith, Assistant Professor, M.A., Rutgers University, 1985; 1994. Television documentary writing and production.

Murrie, Michael, Associate Professor, M.A., University of Missouri, Columbia, 1977; 1988. Television news performance, and new technology.

Robbins, Buren C., Associate Professor, *Emeritus*, M.A., University of Iowa, 1935; 1949.

Shipley, Charles W., Professor, *Emeritus*, Ph.D., Florida State University, 1971; 1971.

Sitaram, K. S., Professor, Ph.D., University of Oregon, 1969; 1979. Social effects, new technology and intercultural communications.

Starr, Michael, Associate Professor and *Chair*, J.D., Georgetown University Law Center, 1965; 1988. Broadcast law and policy, promotion, management.

The Master of Arts degree in telecommunications provides advanced professional training for students preparing for leadership positions in radio and television broadcasting, cable television, corporate video, and related fields. Content areas include the structure and organization of broadcast-related industries, mass media theories, economic and management perspectives, emerging new technologies, policy and regulatory issues, content criticism and review, programming innovations, international perspectives, and societal effects. Graduates of the program advance to leadership positions in broadcast stations, cable systems, production houses, corporate and public sector video departments, or teach in colleges and universities.

Admission

A baccalaureate degree is required from an accredited university for admission to the M.A. degree in telecommunications with preference given to those who have studied radio-television. For students coming from non-radio/TV backgrounds or whose preparation is lacking in certain areas, additional undergraduate course work may be required by the graduate faculty. Courses taken to satisfy deficiencies will not be counted towards the M.A. degree. Applicants must submit an application form obtained from the department, transcripts of all undergraduate work, evidence of scholarship such as a research paper, and evidence of proficiency in a foreign language or computer programming. In addition, all applicants must fulfill the requirements for admission to the Graduate School.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Requirements

A minimum of 30 graduate credit hours is required for the M.A. degree in telecommunications. Of these, 6 hours must be taken in an outside department but related to the student's program and approved by the student's adviser. For example, courses in business administration may be chosen by students focusing their studies in the area of management. A minimum of 18 hours must be successfully completed at the 500 level or above. All students in the program are required to successfully complete RT 500 Introduction to Research in Telecommunications, RT 532 Telecommunications Research, RT 573 Telecommunications

Management, RT 571 Telecommunications Policy. Students are also required to complete selected other 500 level courses in their major.

As a part of the 30 hours required for graduation, each student must select one of two options:

Plan 1. Thesis. Each student must complete a minimum of 30 semester credit hours including a traditional written thesis (RT 599, Thesis) which counts 3 to 6 hours in the program. An oral examination by the faculty advisory committee is given upon completion of the thesis.

Plan 2. Research report. Each student must complete a minimum of 30 semester hours including an individual research report (RT 591, Individual Study in Telecommunications) which counts 3 hours in the program. A research report is required which should be based upon supervised research or an independent investigative project approved by the student's advisory committee. An oral examination by the faculty advisory committee is given the student upon completion of the research report.

During the first semester of course work, the student will be appointed a major adviser and a committee of 2 additional graduate faculty members. The committee will work with the student to prepare a specific plan of study. The major adviser will also serve as the director of the student's thesis. In all instances students will be required to pass comprehensive examinations upon completion of course work and prior to work on the thesis.

Retention

A 3.0 grade point average in course work taken at the 400 level and above is required. It is expected that students will be in full-time residence for a minimum of one calendar year. A maximum of 12 hours of relevant transfer credit may be accepted into the student's program.

M.A. in Telecommunications/M.B.A. Concurrent Degree Program

The Department of Radio-Television (R-TV) in the College of Mass Communication and Media Arts (MCMA) and the College of Business and Administration (COBA) together offer an M.A. in telecommunications/M.B.A., a concurrent degree program leading to both the Master of Business Administration and the Master of Arts degrees with a major in telecommunications. The M.B.A. degree requires completion of 32 semester hours of coursework; the M.A. with a major in telecommunications requires the completion of 30 semester hours of coursework. In the concurrent M.A. in telecommunications/M.B.A. degree program, COBA accepts 6 semester hours of R-TV approved coursework, and R-TV accepts 6 hours of COBA approved coursework. The end result is that the concurrent degree program entails completion of 26 semester hours of COBA approved courses and 24 semester hours of R-TV approved courses, for a total of 50 hours; this is a savings of 12 semester hours over pursuing both degrees separately outside of the M.A. in telecommunications/M.B.A. concurrent degree program.

Students interested in enrolling in the concurrent M.A. in telecommunications/M.B.A. program must apply to both the graduate program in R-TV and the graduate program in COBA. The student must be accepted by both programs. This initiates the process to pursue the concurrent degrees.

Students enrolled only in the M.A. in telecommunications or only in the M.B.A. in COBA may request admission into the other program and approval to pursue the concurrent degree program. Admission to the concurrent degree program must be done one semester prior to the last semester of registration at SIUC.

Courses (RT)

Graduate work in the Department of Radio-Television is offered toward the Master of Arts degree in telecommunications. Four-hundred-level courses in this department may be taken for graduate credit unless otherwise indicated in the course description.

430-3 News and Public Affairs Programming.

Examination of history and scope of news and public affairs programming. Effects of public affairs on programs and audiences. Responsibility of radio and television stations in news and public affairs and community relations. Issues in news and public affairs including ethics. Prerequisite: senior standing, C in Radio-Television 300m and Mass Communication and Media Arts 201, and successful completion of the language skills exam.

453-3 Educational and Public Broadcasting.

The history and regulatory structure of educational and public broadcasting in the United States today, with special emphasis on organizations regulated under the Public Broadcasting Act of 1967. Methods of funding public stations, programming and careers in educational and public broadcasting considered. Prerequisite: senior standing, C in Radio-Television 300m and Mass Communication and Media Arts 201, and successful completion of the language skills exam.

467-3 International Broadcasting. An examination of broadcasting theory related to rural audiences in the United States and abroad. History of farm broadcasting in the United States and abroad. Communications in development is explored. Research on effects on rural audiences. Open to non-majors with consent of instructor. Prerequisite: Mass Communication and Media Arts 201, senior standing, successful completion of language skills exam.

470-3 Television News Field Production. Advanced field reporting for television. Students will work under the supervision of the instructor to develop, investigate and report news stories for television. This process will also study the development and production of the mini-documentary. Class will utilize 3/4-inch video recorders, cameras and editing systems. Prerequisite: Successful completion of language skills exam, 370 or consent of instructor.

481-3 Non-Broadcast Television. An examination of the special requirements of business, industrial and medical uses of television. Management, budgeting, planning and evaluating productions. Exploration of cable television, satellites and other technologies used in non-broadcast situations. Prerequisite: 365 or concurrent enrollment or consent of instructor, successful completion of language skills exam.

483-3 Advanced Radio-Television Writing. Exercises in writing broadcast manuscripts including documentary, drama, and children's programming. Prerequisite: Successful completion of language skills exam, senior standing and 340, 310 or 383 and consent of instructor.

489-2 to 6 Radio Television Workshop. Advanced work in various areas of radio-television and interrelated disciplines. Prerequisite: consent of instructor.

491-3 Independent Study. Area of study to be determined by student in consultation with graduate faculty.

No more than two students may work on same project. Students must complete an application form which is available from the departmental adviser. Prerequisite: senior standing and consent of instructor.

500-3 Introduction to Telecommunications.

Salient issues and prevailing trends in telecommunications. Introduction to telecommunications research methods with special attention given to the preparation of thesis proposals. Required for all graduate students in telecommunications. Prerequisite: restricted to M.A. telecommunications majors or by consent of the instructor.

510-3 Telecommunications Programming.

Designed to train advanced students in programming strategies for telecommunications. Includes analysis of audience needs. Analysis and interpretation of program ratings. Analysis of program formats and programming strategies.

530-3 International Telecommunications.

Thorough examination of telecommunications systems in other countries. Explores telecommunications across national borders and the role of telecommunications in developing countries.

532-3 Telecommunications Research.

Techniques of social science research applied to the study of telecommunications. Emphasizes the conceptualization, design and implementation of various approaches including survey, experimental design and content analysis. Required of all graduate students in telecommunications. Prerequisite: restricted to M.A. telecommunications majors or by consent of instructor.

570-3 Aesthetics of Telecommunications. Development of critical criteria and application of methods of analysis by which the content, aesthetic elements, and forms of television programs are objectively evaluated. Extensive reading in critical literature and several critical analyses are required.

571-3 Telecommunications Policy. Study of the history and development of telecommunications policy. Broad issues in policy are discussed, including policy relating to telecommunications management and international telecommunications. Legal research techniques are emphasized. Extensive readings required. Required of all graduate students in telecommunications. Prerequisite: restricted to M.A. telecommunications majors or by consent of the instructor.

573-3 Telecommunications Management.

Theoretical perspectives in telecommunications management. Includes examination of the organization and management of commercial and non-commercial telecommunications organizations with an emphasis on leadership theories and techniques. Required for all graduate students in telecommunications. Prerequisite: restricted to M.A. telecommunications majors or by consent of the instructor.

580-3 Telecommunications Technology. Ongoing examination of new and emerging commu-

nication technologies, analyses of their perceived uses and potential. Creative or theoretical research required.

589-3 Telecommunications and Society. The study of effects of telecommunications on various segments of society. Group and individual investigation into research methodology and literature on effects.

591-3 Individual Study in Telecommunications. Supervised research or independent investigative projects. Area of study should be determined by student in consultation with adviser and committee.

595-3 Advanced Seminar: Telecommunications. Advanced research and discussion of specialized issues in telecommunications.

598-1 to 3 Research Report. One to three hours required of all non-thesis students writing a re-

search paper and engaging in a companion creative project. Graded *S/U* only.

599-1 to 6 Thesis. Thesis requirements may be satisfied only by a traditional written thesis. Maximum of six hours may be counted toward degree requirements.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Theater

E-mail: blacks@siu.edu

COLLEGE OF LIBERAL ARTS

Barnes-McLain, Noreen, Associate Professor, Ph.D., Tufts University, 1986; 1995. Criticism, theater history and theory.

Blackstone, Sarah J., Associate Professor and Director of Graduate Studies, Ph.D., Northwestern University, 1983; 1991. Criticism, theater history and theory.

Chrestopoulos, Alexander, Assistant Professor, M.F.A., Arizona University, Tucson, 1980; 1990. Voice and acting.

Johnston, Jan, Assistant Professor, M.F.A., University of Washington, 1990; 1993. Costume design.

Krasner, David, Assistant Professor, M.F.A., Virginia Commonwealth University, 1990; 1995. Directing, writing.

McLain, David, Adjunct Associate Professor, M.F.A., University of Oregon, 1979; 1988. Lighting design and technical direction.

Merrill-Fink, Lori, Assistant Professor, M.F.A., University of Arizona, Tucson, 1988; 1988. Acting, voice, and movement.

Moe, Christian H., Professor and Chair, Ph.D., Cornell University, 1958; 1958. Playwriting, theater history, and criticism.

Naversen, Ronald, Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1989; 1989. Scenic design.

Stewart-Harrison, Eelin, Professor, *Emerita*, Ph.D., Louisiana State University, 1968; 1961.

The Department of Theater blends scholarship and practice into an academically based theater experience preparing the student for a career in professional, educational, or community theater. The extensive production schedule in two theaters—a proscenium house, the McLeod Theater, seating about 500 and a flexible space, the Laboratory Theater, seating about 100—provides training in all aspects of the theater augmented by courses in acting, voice, movement, directing, playwriting, production, design, and technical theater. Courses in theater history, dramatic theory and criticism, aesthetics, and specialized courses, e.g., children's theater and theater management, complement the program. Students are required to widen their horizons by appropriate courses outside the department. Seminars in theater and drama enhance the total experience.

The Department of Theater offers a graduate program of study leading to a Master of Fine Arts degree in theater. Doctoral study in theater is sponsored by the Department of Speech Communication. Interested students should consult the description of the program under speech communication.

Admissions

One set of forms must be submitted by the applicant to the Department of Theater. All forms should be requested from the director of graduate studies in theater. Applicants for graduate studies in theater must satisfy the minimum requirements of the Graduate School before being admitted to the department,

which requires the submission of a personal and professional data form together with 3 letters of recommendation from former teachers or supervisors.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Although an undergraduate major in theater is not essential for admission to a graduate degree program in theater, the director of graduate studies may require that certain course deficiencies in undergraduate subject areas be remedied. These requirements are stated in writing on the admissions approval form.

There are additional requirements established by each of the three areas of study in the M.F.A. program. Applicants in the directing area are interviewed and required to submit materials that are representative of their previous theater work and/or indicate an aptitude for stage direction (examples would include promptbooks, programs, reviews, photos, video tapes or casebooks from previous directing efforts. Alternatively, a detailed production plan for a play selected by the faculty may be required). Applicants in the production design/technical areas are required to submit portfolio samples of their work. Applicants in the playwriting area must submit examples of their writings. More detailed information about these requirements is obtainable from: Director of Graduate Studies, Department of Theater, Southern Illinois University at Carbondale, Carbondale, IL 62901-6608, 618-453-5741.

Financial Assistance

There are several kinds of financial assistance available to graduate students in the Department of Theater. First, there are graduate fellowships awarded on the basis of superior scholarship. Second, special fellowships are offered annually to students who show promise of success in graduate studies although their academic records have been only average due to economic disadvantages. The fellowships have no service requirements. Third, graduate assistantships (over \$5,000 per academic year) are available to students who are employed in various academic support positions, such as teaching, researching, and production. All fellowships and assistantships include a waiver of tuition (both in-state and out-of-state). Applications for financial assistance may be obtained by writing to the director of graduate studies.

The Master of Fine Arts Degree Program

The Master of Fine Arts degree program in theater emphasizes practical expertise in one of the following areas: directing, production design (separate emphases in scenic, lighting, costume design, and technical direction), and playwriting. Coordination of cognate areas within the University structure offers the possibility of study in such interdisciplinary fields as dramatic literature, American theater, and music theater, among others. In most instances, a minimum three year residency is required of all M.F.A. students.

All M.F.A. students must complete a minimum of 60 semester hours of course work, including the M.F.A. degree core requirements:

THEA 400 — 4 hours

THEA 500, 501 — 5 hours

Basic theater course in area — 3 hours

Total M.F.A. core — 12 hours

Besides the core requirements, the student will propose and successfully complete a project to qualify for further study in the chosen area. This project will be developed in concert with the student's committee consisting of three faculty members.

In addition, each of the three areas of study has specific area and elective requirements which are as follows.

Directing.

M.F.A. core (including THEA 402b) — 12 hours

Area requirements — 32

THEA 401-2 hours

THEA 403-3 hours

THEA 417-3 hours

THEA 454-3 hours

THEA 502-9 hours

THEA 511-3 hours

THEA 526a-3 hours

THEA 599-6 hours

Electives (by advisement) — 16 hours

Total: 60 hours

Production Design.

M.F.A. core (including THEA 407) — 12 hours

Area requirements — 32

THEA 414, 418-6 hours

THEA 510-8 hours

Area theater electives-6 hours

THEA 511 or 522-6 hours

THEA 599-6 hours

Electives (by advisement) — 16 hours

Total: 60 hours

Playwriting.

M.F.A. core (including THEA 411a) — 12 hours

Area requirements — 35

THEA 402a or b, or 502-3 hours

THEA 411b, 511, 526b-9 hours

THEA 504, 505-6 hours

THEA 511 or 522-3 hours

THEA 454 or 550-2 to 3 hours

THEA 530-6 to 5 hours

THEA 599-6 hours

Electives (by advisement) — 13 hours

Total: 60 hours

Thesis requirements vary for each area of study; however, they include a research component as well as a description and evaluation of the student's creative project. In concert with the student's committee, the candidate may choose to separate the two, submitting an approved research paper during the first academic year and a creative thesis after completion of the M.F.A. final project.

The Department of Theater requires an oral examination, conducted by the student's thesis or dissertation committee, for each M.F.A. and Ph.D. degree candidate. The examination covers the thesis or dissertation, and may include questions designed to ascertain the student's general competence in theater.

Courses (THEA)

400-1 to 6 (1 to 2 per semester) Production. Practicum for support of major department productions in all areas. Roles in department productions may fulfill requirement.

401-2 to 6 (2 per Semester) Stage Management. Study and practical application of the theories and skills required to successfully stage manage a theater production. Students will fulfill

stage management assignments in departmental productions. Prerequisite: 218a and consent of instructor.

402-6 (3, 3) Play Directing. (a) Introduction to directing. The history of the director; the evolution of the director into a position of predominance in modern theater hierarchy. The function of the director; and examination of theoretical

viewpoint. Textual analysis; establishing the groundwork for the director's approach to production. Prerequisite: junior standing; 217 and 311a; or consent of instructor. **(b)** The principles of play direction including play selection, analysis and patterning of auditory and visual elements of production. Directing of a one-act play. Prerequisite: consent of instructor.

403A-3 Advanced Movement for the Actor. Advanced studies in stage movement with special attention to period styles. Prerequisite: 303a, 317a,b

403B-3 Advanced Voice for the Actor. Advanced studies in voice with special attention to stage dialects. Prerequisite: 303b, 317a.

404-3 Theater Management. Discussion of legal and financial aspects concerning the professional and community theaters of the United States. Consideration of and practice in managerial activities of an educational theater including administration, purchasing, accounting practices, direct sales, publicity, promotion and public relations.

406-3 Properties and Crafts for the Stage. Studio work in traditional and non-traditional crafts for theatrical events, including life masks, upholstery, puppetry, stage furniture and special effects.

407-3 Scene Design. Technical and artistic aspects of scene design. Theory and practice. Supplies at least \$25 per semester. Prerequisite: 218a, 309, 409, or consent of department.

408-3 Model Making. The craft of scenic model making for the stage and other dramatic media. Prerequisite: 218a or consent of department.

409A-3 Scene Painting. Studio work in lining, paneling, tromp l'oeil ornament and drapery. Prerequisite: 218a or consent of department.

409B-3 Advanced Scene Painting. Advanced studio work in scene painting, including dye painting, transparencies, color mixing and mural work. Prerequisite: 409a or consent of instructor.

410-3 Children's Theater. Study of methods and their practical application of introducing children to theater and theatrical productions as an art form. Includes the writing of a short play for children. Recommended for majors in education programs.

411A-3 Playwriting — The One-Act Play. Principles of dramatic construction and practice in the writing of two one-act plays. Problems of adaptation are treated. Individual plays have the opportunity to be produced in the theater's program for new plays. Prerequisite: one course in dramatic literature for non-majors and graduates; 311a for undergraduate theater and speech communication majors; or consent of instructor.

411B-3 Playwriting — The Full-Length Play. Principles of dramatic construction and practice in the writing of a full-length play, encompassing such varied types as the children's play, the musical, the outdoor historical drama, etc. In special cases, students may elect to write three short plays. Prerequisite: 411A or consent of instructor for non-majors; 311a for undergraduate theater majors.

414-3 Costume Design. History of Western Costume from Greek to Renaissance and its adaptation to stage use. Theory and practical application of design and color. Supplies at least \$25. Prerequisite: 218c or graduate standing.

417-3 to 6 (3,3)Advanced Acting. Utilization of the actor's process in the performance of European realism and various theories and styles of the Twentieth century. Prerequisite: 317b. May be repeated once for credit.

418-3 Introduction to Lighting Design. Investigation of stage lighting design, theory and professional practice. Special attention to color theory and its application to stage lighting. Four hours lecture/laboratory. Prerequisite: 218b, graduate standing or consent of instructor.

419-3 Advanced Stagecraft. Advanced study of principles and procedures of scenic construction and stage rigging. Includes scene shop organization, materials, and specialized stage equipment; preparation for professional technical direction. Lecture and laboratory to be arranged. Prerequisite: 218a,b, 309, 407; or graduate standing.

454-3 American Theater. The development of American theater from colonial times to the present. Includes a study of the American musical theater from preminstrels through contemporary music-drama.

500-2 Introduction to Research Methods. An introduction to the principles and methods of the various types of research in theater. The student may elect to focus on the research demands of a selected area of interest within the degree program pursued. One objective is the formulation of a research problem and a prospectus. Prerequisite: graduate standing.

501-3 Contemporary Developments. A survey of the significant developments in theater and related arts from the beginning of the 19th century to the present through the study of documentary material, critical works, and selected plays. Individual reports, guest lecturers and lectures provide focus on selected areas. Required reading encompasses a broad spectrum of subjects. Prerequisite: graduate standing.

502-3 to 9 Advanced Directing. Emphasis on practical directing problems and concerns of individual students through research, rehearsal and performance. Includes survey of directing theories and practices with laboratory application of directing techniques. Prerequisite: consent of instructor.

504-3 The Comic Theater. A study of comedic drama, theory, and criticism as applied to types of comedy with a focus on interpretation for the theater practitioner. Individual reports are assigned.

505-3 The Tragic Theater. An examination of tragic drama and criticism as related to the societies which produced such drama. Individual reports are assigned.

506-3 Spectacle: The Vision of Theater. Discussion and evaluation of the role and responsibility of theater artists to promote audience understanding of the visual through application of design and directing principles. Exploration and examination of the style and meaning of communication between members of a production team in today's theatre through group projects.

507-3 Advanced Scene Design. Advanced consideration of principles of scene design. Scenography as a dynamic force in theater and related media worldwide. Supplies at least \$25 per semester. Prerequisite: 407 or consent of instructor.

510-2 to 8 Production Design Seminar. Exploratory workshop experience in innovative con-

temporary rendering techniques and methods for translation of metaphorical into theatrical visuals values, with emphasis on design sophistication. To include, among other topics, theatrical rendering presentation, sketching, and color and texture experimentation. Comprehensive development of portfolio projects. To be taken by graduate production design students each semester in residence.

511-3 to 6 Playwriting Workshop. A practical laboratory course in which playwriting students will have one or more original plays presented in staged readings or modified productions. Plays will be directed and, in part, acted by graduate acting/directing students also enrolled in the course. The workshop gathers a performance group for the presentation of the new plays. Student playwrights are expected to constantly improve their work before and after presentation, to attend rehearsals, to work closely with directors and actors. Plays will be evaluated in critique sessions. Restricted to graduate playwriting and acting/directing students in the theater program. Prerequisite: graduate standing; theater major; 411a and b or consent of instructor.

513-2 Stage Movement for Graduate Actors. Practical work in stylized movement. Prerequisite: consent of instructor.

514-3 Advanced Costume Design. Advanced consideration of principles of costume design. Theory and history of costumes from Renaissance through early 20th century. Practical applications of methods and procedures in designing costumes. Supplies at least \$25 per semester. Prerequisite: 414 or consent of instructor.

517-3 Graduate Acting Studio. Advanced work on scenes from the classics, contemporary drama and/or musical theater. Prerequisite: consent of instructor.

518-3 Advanced Lighting Design. Expansion and refinement of the visual imagination of the lighting designer. Investigation of theatrical applications of lighting for dance, opera, performing arts, architecture, advertising and landscaping. Prerequisite: 218a,b, 309 and 418.

522-1 to 12 SIU Summer Theater. Practical experience in summer stock play production. Performance or technical work in SIU Summer Theater only. Maximum of six hours per summer. Prerequisite: audition and consent of instructor.

526-3 to 12 (3 per topic) Seminar in Theater Arts. Special topics of interest to advanced students. Subject is determined by department and instructor. Areas: (a) Performance/production. (b) Theory, criticism, and playwriting. Seminar in same area may be taken twice. Prerequisite: consent of instructor.

530-1 to 12 Independent Study. Independent research on selected problems. A maximum of three credit hours may be taken for a single project. Prerequisite: consent of instructor.

550-2 to 6 (2 per topic) Topical Seminar. In-depth studies of topics of special interest to advanced students concerning individual or groups of playwrights, directors, designers, and their techniques and theories. Topic is determined in advance. Prerequisite: consent of instructor.

560-1 to 21 Professional Work Experience. Credit may be granted for professional work experience prior to acceptance into the program. Prerequisite: approval by departmental graduate committee required. Graded *S/U* only.

561-1 to 12 Theater Internship. After completion of the M.F.A. core curriculum and basic courses in student's specialization, credit may be granted for internship at professional theaters, training programs, or studios. Prerequisite: prior approval of departmental graduate committee required. Graded *S/U* only.

599-1 to 6 Thesis. Minimum of three hours to be counted toward a master's degree.

600-1 to 36 (1 to 16 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Workforce Education and Development E-mail: wed@siu.edu

COLLEGE OF EDUCATION

Anderson-Yates, Marcia, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1975; 1970. Workforce education program administration, administrative services training, teaching methodology, curriculum development, philosophy of vocational education, women in administration.

Bailey, Larry J., Professor, Ed.D., University of Illinois, 1968; 1969. Career education, school-to-work transitions, research methods, measurement and evaluation.

Baker, Clara Mae, Associate Professor, Ph.D., Ohio State University, 1989; 1989. Teaching methodology, curriculum & instruction, professional development, office administration, qualitative research.

Bortz, Richard F., Professor, Ph.D., University of Minnesota, 1967; 1977. Instructional systems design, occupational training and curriculum development, organizational and occupational analysis, competency-based education and training, individualized instruction, faculty development and evaluation.

Buila, Theodore, Associate Professor, Ph.D., Cornell University, Ithaca, NY, 1968; 1968. Education and training in developing countries, curriculum strategies in vocational education, non-formal education and training, agricultural development, foundation and policy issues in vocational-technical education.

Carter, Rose Mary, Assistant Professor, Ph.D., Purdue University, 1970; 1970. Special needs

learners, curriculum development, supervision, methods of instruction, experience based career education, at-risk populations, clientele characteristics.

Gooch, Bill G., Professor, Ed.D., University of Tennessee, 1973; 1973. Cooperative vocational education, management of vocational and technical education.

Huck, John F., Associate Professor, Ed.D., University of Illinois 1973; 1970. Instructional methods and development, computer based training, industrial training and adult education.

Jenkins, James, Professor, *Emeritus*, Ed.D., Pennsylvania State University, 1955; 1956.

Keenan, Dorothy, Professor, *Emerita*, Ed.D., University of Illinois, 1962; 1961.

Legacy, James, Professor, Ph.D., Cornell University, 1976; 1977. Agricultural education, microcomputer use in education, curriculum development, extension education, teacher education, competency based vocational education.

Ramp, Wayne S., Professor, *Emeritus*, Ed.D., Bradley University, 1956; 1957.

Reneau, Fred W., Professor., Ed.D, Virginia Polytechnic Institute and State University, 1979; 1979. Multimedia development, task analysis, research, adult education, curriculum development, program and student assessment, test development.

Ridley, Samantha Sue, Assistant Professor, M.S., Southern Illinois University at Carbondale, 1959; 1964. Patternmaking, tailoring, special clothing needs for the physically handicapped and

the elderly, consumer clothing and shopping preferences.

Rosenbarger, Maxine, Associate Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1970; 1973.

St. John, Wayne L., Associate Professor, *Emeritus*, Ph.D., University of Oregon, 1954; 1975.

Stadt, Ronald W., Professor, Ed.D., University of Illinois, 1962; 1967. Evaluation, curriculum, leadership characteristics, industrial occupations, cooperative education, special needs, corporate training.

Stitt, Thomas R., Professor, Ph.D., Ohio State University, 1967; 1967. Curriculum specialist, agricultural education, training and development, microcomputers, computer assisted instruction and methods.

Sullivan, James A., Professor, Ed.D., West Virginia University, 1967; 1968. Workforce development, performance assessment, certification testing, cooperative education, hydraulics and pneumatics training and testing.

Washburn, John S., Professor and *Chair*, Ed.D., University of Illinois, 1977; 1986. Employment and training, workforce development, research, curriculum development, personnel development, and programs for special populations.

Wood, Eugene S., Professor, *Emeritus*, Ed.D., University of Missouri, 1958; 1949.

Workman, Jane, Professor, Ph.D., Purdue University, 1982; 1989. Dress and social behavior, apparel technology and design, consumer behavior.

The Department of Workforce Education and Development offers programs of study leading to the Master of Science in Education and Doctor of Philosophy degrees. Information about either program may be obtained by writing: Coordinator of Graduate Studies, Department of Workforce Education and Development, Southern Illinois University at Carbondale, Carbondale, IL 62901-4605.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Master of Science in Education Degree

The master's degree with a major in workforce education and development is designed to accommodate a broad range of individuals preparing for teaching and non-teaching roles in education, business, industry, government, and other fields. The major consists of a minimum of 30 semester hours of course work organized into 3 components.

Professional Core Requirements. This consists of 4 courses: WED 561, 566, 580, and EPSY 402. Students are required to take a minimum of 9 hours (3 courses) from the core.

Speciality Area Courses. This consists of 12–18 semester hours of course work relevant to a student's career goals. Technical courses, professional courses, individualized study, and internships may be included. Courses may be taken within the department or in other units of the college or University.

Research Paper or Thesis. In accordance with Graduate School requirements, a research paper or thesis must be written showing evidence of the student's

knowledge of research techniques. The majority of students select the research paper option. Students enroll in 3 semester hours of WED 593 to develop the research paper. Students choosing the thesis option will enroll for 6 semester hours of WED 599.

The program of study is individually tailored based on the student's background, interests, and career goals. Representative programs of study include: secondary teacher of vocational or practical arts education, post-secondary technical teacher, local director of vocational education, coordinator of cooperative vocational education, industrial trainer, employment and training specialist, manager of human resource development, and extension adviser. Upon completion of all requirements, a final oral or written examination covering the course work and research paper or thesis is conducted by the student's advisory committee.

Doctor of Philosophy Degree in Education

Advanced studies leading to the Doctor of Philosophy degree in education with a concentration in workforce education and development is offered through the Department of Workforce Education and Development. The concentration is a broad, general leadership, and professional development degree that caters to people having knowledge, experience, and interests in the fields of: (a) vocational and technical education, (b) career education, (c) employment and training, or related fields. Even though many students who enter the program have a specific service area identity (e.g., agriculture education, business education, health occupations education, home economics education, industrial education), the degree is not awarded in a service area specialty.

Within the workforce education and development concentration a student may select one of 3 areas of specialization: (a) management, (b) professional development, or (c) research. The specialty area should be chosen based on the student's background, interests, and future career goals.

Persons seeking admission to the program must meet all requirements for admission established by (a) the Graduate School of the University, (b) the College of Education, and (c) the Department of Workforce Education and Development. It is required that applicants possess a background of academic and professional experience which will provide a basis for advanced study and research. More specifically, the program is designed for individuals with a background and experience in teaching, program administration, or training and development. Admission to the concentration is determined by a screening committee composed of a minimum of 3 members of the graduate faculty of the Department of Workforce Education and Development.

The program of study consists of 64 hours beyond the master's degree and includes an 8-hour professional seminar sequence in the College of Education, a 15-hour departmental core, 17 hours of supportive studies which may include an internship, research tool competence, and 24 hours of dissertation credit.

Courses (WED)

401-3 Authoring Computer Based Instruction in Workforce Education. Develops the basic practical skills and theoretical knowledge required to create computer based instruction for workforce education. Planning and developing CBT lessons are included.

410-3 Issues in Business Training/Education. Study of current issues in business training and education related to history, current status and trends. Organization of instruction, instructional settings, relation to general education, integration and impact of technology, curriculum devel-

opment/review and evaluation of business training/education impact in the workplace.

412-3 Office Systems Planning and Implementation. Planning for office systems development through investigation of procedures and systems used in various types of offices. Study of work flow, information processing, employee and group interactions, office information systems from end user perspective. Study of development and implementation processes and strategies detailed through field-tested projects. Students enrolled for graduate credit will develop an end-user office support system as a result of the project.

415-7 (1,1,1,1,1,1,1) Instructional Methods for Business Education. Specific methods, techniques and materials to deliver instruction in these business education areas of: (a) Accounting, (b) Basic business and marketing, (c) Computer systems, (d) Keyboarding, (e) Information processing, (f) Shorthand, (g) Employability skills. Prerequisite: 310, 462 or Education 315.

417-3 Administrative Office Communications. Application of communication theory, human relations concepts, research methods and information technology to professional application of automated information systems. Projects include oral and written reports, systems-related documents (reports, proposals and procedures) and systems documentation for users; emphasis on human factors of communication in a technological environment. Prerequisite: 302 or equivalent.

418-3 Training and Development in Administrative Services. Theories of learning and instructional development to the education/training of employees in office systems/administrative services. Analysis of office and administrative services occupations, instructional design, instructional and presentation strategies, training evaluation, use of instructional technology, and implementation and evaluation of training in an organizational environment. Prerequisite: Office Systems Specialties 412 or equivalent.

428-3 Home Economics for Elementary Teachers. Identification and development of home economics related experiences appropriate for various levels of elementary curriculum. Interpretation of current vocational education legislation and trends affecting elementary programs.

431-3 Demonstration and Laboratory Techniques in Home Economics Education. Practice in planning and carrying out instructional demonstrations in home economics for youth and adults. Use of audiovisual aids and hand-outs. Procedures for laboratory and guided practice to develop psychomotor skills. Attention given to TV presentations. \$5 to \$8 lab fee required. Prerequisite: 320.

439-3 Historic Clothing: Western Cultures. Development of clothing in western civilization to the present time. Consideration of social, economic, aesthetic factors and technical innovations influencing clothing. Prerequisite: 347.

440-3 Experimental Apparel Design. Development of apparel to meet aesthetic, structural and functional needs; problem solving for exceptional proportions, rehabilitation, activity, performing arts, new technology, materials and environment. Prerequisite: 340, 342, 344, and 348.

442-3 Clothing Economics. Factors of production, distribution and consumption influencing clothing industry; management of these factors in clothing related businesses; place of clothing industry in national and international markets. Prerequisite: GEB 211 or Economics 214.

444-3 Mass-Market Apparel Design. Design of a line to specifications; drafting; toiles, mass-production costs; work flow; use of industrial equipment. Field trips. Prerequisite: 340, 342, 344 and 348.

445-3 Textile Product Testing. Exposure to and experience with methods used by retailers and manufacturers of textile items to measure

performance and maintain quality. Standards, sampling and replication requirements and interpretation of results. Prerequisite: 345a,b.

446-3 Professional Practices in Fashion Design. Business principles of apparel design, including systems, forms and logistics of money and materials. Functions and responsibilities of the fashion designer. Career opportunities in the fashion industry. Prerequisite: 340, 342, 344, 348.

448-3 Custom Tailoring. Individualizing, fitting and contouring male or female garments for customers from commercial pattern or from original pattern. Organization of work and time. Prerequisite: 348.

449-3 Historic Clothing: Non-Western Cultures. Traditional dress in non-western cultures. Aesthetics, symbolism and uses of costume in the culture; effect of clothing on economy. Cultures studied may vary with each offering. Offered alternate years. Prerequisite: junior standing.

460-3 Occupational Analysis and Curriculum Development. Systems approach to curriculum development. Includes analyzing occupations, specifying objectives and developing curriculum in (a) Administrative services training, (b) Business education, (c) Education, training and development, (d) Home economics, and (e) Vocational teacher development.

462-3 Instructional Methods and Materials. Instructional methods in occupational training in (a) Administrative services training, (b) Business education, (c) Education, training and development, (d) Home economics, and (e) Vocational teacher development. Prerequisite: 460.

463-3 Assessment of Learner Performance. Development and use of evaluation instruments to assess student performance in training classrooms and laboratories. Criterion- and norm-referenced objectives, applications of taxonomies in development of written tests, performance tests and attitude measures. Prerequisite: 460.

464-3 Special Needs Learners and Work Education. Theoretical and applied concepts in teaching special needs learners. Affective aspects of learning are emphasized. Curricula and teaching materials are examined and prepared. Field trips.

466-3 Foundations of Work Education. Examination of the historical, social, economic and psychological foundations of workforce education. Nature and role of education and training in preparing people for the world of work.

468-3 Education/Labor Force Linkages. Attention given to the following areas: overcoming barriers to the linkage process; developing effective lines of communication; resource sharing; conducting joint problem solving with other agencies and individuals within the community; and jointly developing and providing programs and services.

469-3 Training Systems Management. Insight and understanding of administration and management of organizational training. Principles and techniques of managing training organizations. Process of planning, organizing, programming, staffing, budgeting and evaluating a training organization.

472-3 Organizing Cooperative Education. Introduction to cooperative education including history, rational, legislation, goals and objectives.

Programming, public relations and evaluation of cooperative education. Introduction of student selection and management of cooperative education programs. Fulfills three semester hours of six required for State of Illinois certification.

473-3 Coordinating Cooperative Education. Competencies required for coordination of cooperative education programs. Selection and maintenance of training stations, student placement, related instruction and program management. Fulfills the remaining three semester hours required for State of Illinois certification. Prerequisite: 472.

474-3 Individualized Training. Study and development of theory, characteristics, appropriateness and evaluation techniques of individualized training packages. Review of current state of individualized instruction in work education. Prerequisite: 460.

484-3 Adult Training in Organizations, Business and Industry. A study of adult and workforce education as offered in a variety of educational settings. Major topics include organization, funding, instructional systems, adult characteristics and evaluation. Prerequisite: consent of instructor.

490-1 to 4 Readings. Supervised reading for qualified students. Includes the following areas: (a) Administrative services training, (b) Business education, (c) Education, training and development, (d) Home economics, (e) Vocational teacher development, or (f) Clothing and textiles. Prerequisite: consent of instructor.

491-1 to 5 Advanced Occupational Skills. Modern occupational practice in selected fields. For experienced professionals seeking advanced techniques in (a) Administrative services training, (b) Business education, (c) Education, training and development, (d) Home economics, (e) Vocational teacher development, or (f) Clothing and textiles. Prerequisite: consent of instructor.

494-1 to 4 Workshop. Current work education issues for teachers, supervisors and administrators. Emphasis of each workshop will be identified in each workshop announcements. (a) Administrative services training, (b) Business education, (c) Education, training and development, (d) home economics, (e) Vocational teacher development, or (f) Clothing and textiles.

497-1 to 6 Practicum. Applications of work education skills and knowledge. Cooperative arrangements with corporations and professional agencies to study under specialists. For (a) Administrative services training, (b) Business education, (c) Education, training and development, (d) Home economics, (e) Vocational teacher development, or (f) Clothing and textiles. Prerequisite: 20 hours in specialty.

498-1 to 5 Special Problems. Investigation of work education problems in (a) Administrative services training, (b) Business education, (c) Education, training and development, (d) Home economics, (e) Vocational teacher development, or (f) Clothing and textiles. Prerequisite: consent of instructor.

501-3 Multimedia Production Technologies in Workforce Education. The application of multimedia technologies into workforce education and development delivery systems. Course participants will design, develop, edit and deliver indi-

vidual training multimedia products. Prerequisite: consent of instructor.

502-3 Multimedia Delivery of Workforce Education by Distance Learning. The delivery of multimedia technologies to workforce education and development training settings. Course participants will be involved as members of a team in the design and delivery of the multimedia technologies used in training the workforce. Prerequisite: 501 and consent of instructor.

510-3 Improvement of Instruction in Business Education. Designed for the experienced teacher who is interested in the study of curriculum and teaching problems in business education. Deals with teaching procedures, instructional materials, tests and evaluation, and organizations of teaching units and projects. Prerequisite: 310 or 410 or consent of instruction; teaching experience in business.

518-3 Home Economics Programs in the Schools. Curriculum development in vocational home economics is the focus. Units in family life education, consumer-homemaking, and occupational programs are developed by students for use in their professional responsibilities. Offered alternate years.

520-3 Trends and Issues in Home Economics Education. Analysis and appraisal of current trends, problems and issues in the field. Attention is given to implications for teachers.

521-3 Advanced Methods of Teaching Home Economics. Recent trends in methodology based on research and experimentation. Attention given to methods which promote cognitive, affective and psychomotor learnings. Preparation of materials for special interests of students. Offered alternate years.

538-2 College Teaching of Clothing and Textiles. Central ideas, objectives and current practices. For preparation of college teachers.

547-3 Foundations of Fashion. Anthropological approaches to fashion and socioeconomic and psychological forces as determinants of fashion in modern times. Prerequisite: 347 or consent of instructor.

561-3 Research Methods. Basic research methods and techniques in the design, investigation and reporting of research studies relating to education for work.

562-3 Legislation and Organization. Historical and contemporary thought and practice regarding federal and state legislation related to education for work. Legislators are used as resource persons. Required for supervisors.

564-3 Program Evaluation for Work Education. Evaluation systems and activities for evaluating national, state, and local work education programs. Systems include programmatic accreditation and state agency evaluations. Activities include personnel, facilities, access and equity, community resources and community needs evaluations.

566-3 Administration and Supervision. Nature, function, and techniques of administration and supervision of education for work programs at all levels.

568-3 Facilities Planning. Principles and practices of planning classrooms and laboratories for various education for work programs. How to work with administrators, staff, and paid profes-

sionals to assure judicious location and design of facilities.

572-3 Trends and Issues in Cooperative Vocational Education. Theoretical basis of, and trends and issues in cooperative vocational education (CVE). Historical research into CVE, current directions, and related literature. Investigations into development, implementation and evaluation of CVE programs. Concentration on administration and supervision of major components. Special emphasis on developing a CVE program. Prerequisite: 472.

574-3 Occupational Information. The role of instructional and supervisory personnel in the total occupational information system. Kindergarten to adult.

576-6 (3,3) Policy Implementation and Supervision. Planning, implementing, and controlling local education agency components of state and federal occupational programs. (a) Objective program planning, leadership, communications. (b) Management information systems, financial decisions, staffing patterns.

578-3 Programs in Diverse Settings. Similarities and dissimilarities of education for work programs in public/private, civilian/military, union/management, and other settings. Expectation of instructional and supervisory personnel. Professional contributions of post-secondary teachers.

580-3 Characteristics of Clientele. Familiarization with the characteristics and programming needs of clientele served by various education for work programs.

584-3 Curriculum Foundations for Work Education. Acquaints students with different factors that influence, direct, and shape curriculum as it pertains to the work-oriented aspects of school and society. Topics include law and the curriculum, philosophies and organizational models, differing approaches by grade level and setting, and the development of work-related curriculum.

586-3 Adult Vocational Programs. Philosophy of adult education; current organizational patterns of adult programs; unit planning, methods, techniques and resources.

588-3 Performance-Based Professional Development. Key concepts, terminology, advantages, limitations, and techniques for using performance-based teacher education. Major performance-based teacher education models. Procedures for implementing pre-service and in-service programs. Published learning packages are used

to develop skill in teaching in and managing performance-based teacher education programs. Prerequisite: admission to the Ph.D. program.

590-1 to 9 Readings. Supervised readings in selected advanced subjects. Prerequisite: consent of instructor.

591-1 to 9 New Developments. Recent developments and trends in various aspects of education for work. Instruction provided by recognized authorities.

592-3 Current Issues and Research. Examination of broad topics, issues, and research not covered in other regularly scheduled courses. Emphasis will be on recent and present issues which are in the process of evolving. Content will be selected from three primary professional fields: (a) Vocational/technical education, (b) Employment and training, and (c) Career education. Required of all Ph.D. students.

593-1 to 6 Individual Research. The selection and investigation of a research topic culminating in a paper satisfying the research requirement for a Master of Science in Education degree. Prerequisite: consent of instructor.

594-3 Advanced Research Methods. Development of research competencies and preparation of proposal for thesis or dissertation research. Familiarity with research in various foundation areas of education for work.

595-1 to 16 Professional Internship. Supervised professional experience in appropriate educational settings. May be done on- or off-campus.

598-1 to 6 Special Investigations. Selection and investigation of a problem: use of relevant sources and techniques; collection and analysis, evaluation, interpretation of data, and the writing of a report of the investigation for students whose particular needs are not met by existing classes. Prerequisite: consent of instructor.

599-1 to 6 Thesis.

600-1 to 36 (1 to 12 per semester) Dissertation.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Zoology

COLLEGE OF SCIENCE

Anthoney, Terence R., Associate Professor, M.D., University of Chicago, 1968; and Ph.D., University of Chicago, 1975; 1971. Ethology, neurosciences.

Beatty, Joseph A., Associate Professor, Ph.D., Harvard University, 1969; 1965. Invertebrates: arachnology.

Billington, Neil, Assistant Professor, Ph.D., Loughborough University of Technology, England,

1985; 1991. Fish population and molecular genetics, aquatic ecology, invertebrate genetics.

Blackwelder, Richard E., Professor, *Emeritus*, Ph.D., Stanford University, 1934; 1958.

Brandon, Ronald A., Professor, Ph.D., University of Illinois, 1962; 1963. Herpetology, systematics of amphibians.

Breen, Thomas R., Assistant Professor, Ph.D., University of North Carolina-Chapel Hill, 1985; 1993. Molecular genetics.

E-mail: zoology@zoology.siu.edu

Burr, Brooks M., Professor and *Director of Graduate Studies*, Ph.D., University of Illinois, 1977; 1977. Ichthyology.

Drickamer, Lee C., Professor, Ph.D., Michigan State University, 1970; 1987. Animal behavior.

Dyer, William G., Professor, Ph.D., Colorado State University, 1965; 1969. Parasitology: helminthology.

Englert, DuWayne C., Professor, Ph.D., Purdue University, 1964; 1963. Genetics.

Feldhamer, George A., Associate Professor, Ph.D., Oregon State University, 1977; 1984. Mammalogy, wildlife ecology.

Garoian, George, Professor, *Emeritus*, Ph.D., University of Illinois, 1956; 1956.

Gates, Robert J., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1989; 1990. Waterfowl/wetlands ecology and management.

Halbrook, Richard S., Assistant Professor, Ph.D., Virginia Polytechnic Institute and State University, 1990; 1993. Wildlife toxicology.

Heidinger, Roy C., Professor, Ph.D., Southern Illinois University at Carbondale, 1970; 1970. Ecology of fishes.

Jakubas, Walter J., Assistant Professor, Ph.D., University of Minnesota, 1989; 1993. Wildlife science.

King, David G., Associate Professor, Ph.D., University of California, San Diego, 1975; 1977. Invertebrate neurobiology; evolution.

Kohler, Christopher C., Professor, Ph.D., Virginia Polytechnic Institute, 1980; 1981. Ecology: management, and culture of aquatic organisms.

Krajewski, Carey, Assistant Professor, Ph.D., University of Wisconsin-Madison, 1988; 1990. Molecular systematics; molecular evolution.

LeFebvre, Eugene A., Associate Professor, *Emeritus*, Ph.D., University of Minnesota, 1962; 1966.

Lewis, William M., Professor, *Emeritus*, Ph.D., Iowa State University, 1949; 1949.

Martan, Jan, Professor, *Emeritus*, Ph.D., University of Oregon, 1963; 1964.

McPherson, John E., Jr., Professor, Ph.D., Michigan State University, 1968; 1969. Entomology: insect ecology.

Muhlach, William L., Associate Professor and *Chair*, Ph.D., University of Illinois at Chicago, 1986; 1987. Developmental biology.

Newman, Jonathan A., Assistant Professor, Ph.D., State University of New York at Albany, 1990; 1994. Population and community ecology.

Sheehan, Robert J., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1984; 1986. Environmental biology of fishes.

Shepherd, Benjamin A., Professor, Ph.D., Kansas State University, 1970; 1969. Reproduction: comparative endocrinology.

Stahl, John B., Associate Professor, Ph.D., Indiana University, 1958; 1966. Limnology.

Stains, Howard J., Professor, *Emeritus*, Ph.D., University of Kansas, 1955; 1955.

Waring, George H., Professor, Ph.D., Colorado State University, 1966; 1966. Behavioral ecology and applied ethology.

Woolf, Alan, Professor, Ph.D., Cornell University, 1972; 1979. Wildlife ecology, population dynamics, diseases.

The Department of Zoology's teaching and research programs are supported by appropriate courses, equipment, and facilities in a modern life science building. Available are an electron microscope complex, a centralized animal holding unit, a variety of sophisticated computer facilities, shops for design and construction of research equipment, Morris Library with approximately 1.8 million volumes, specialized research laboratories, and significant research collections. In proximity to the central campus are experimental ponds, wildlife enclosures, and natural laboratories. The Cooperative Fisheries and Wildlife Research laboratories, closely allied with the Department of Zoology, make important contributions to research facilities and research appointments for graduate students. The geographic location, physiographic features, and prevailing land use practices of southern Illinois and adjacent states offer unequalled opportunities for the use of natural and man-made environments in teaching and research. Of special value are the numerous refuges and parks, a national forest, large acreages of surface-mined lands, and a variety of streams and lakes. The Department of Zoology offers the Master of Science and the Doctor of Philosophy degrees. These degrees are awarded on the basis of demonstrated scholarship and the ability to organize, conduct, and report original research. Opportunities are available for experience in teaching and research.

Admission

Applicants for all graduate degrees must fulfill the requirements of the Graduate School.

Applicants for the master's degree must possess the following academic background: 24 semester hours in courses covering the basic principles of zoology; one year of college chemistry (organic or biochemistry is also desirable); one year

of college mathematics including college algebra and trigonometry (calculus and statistics are desirable). A grade point average of 2.70 ($A = 4.0$) or above. Applicants with less than 2.70 will be considered on individual merit.

Applicants for the doctoral degree must demonstrate a sound background of academic training in the biological sciences; hold a master's degree or its equivalent and have a grade point average in graduate work of 3.25 or above. Direct entry from a bachelor's degree to doctoral program is possible for students demonstrating exceptional potential.

Inquiries should be directed to the director of graduate studies in zoology. Separate applications must be made to the Graduate School and to the Department of Zoology. A completed departmental application for admission includes: departmental application form, transcript of all previous college credits, scores from the aptitude test of the Graduate Record Examination, and three letters of evaluation relative to professional and academic competence. All applicants will be notified of the action taken on their application by the director of graduate studies in zoology.

A non-refundable application fee of \$20.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Advisement

Following admission to the department, and prior to registration, a student should consult appropriate faculty (representing student's area of interest) or the director of graduate studies in zoology for assistance in registration. Each student must arrange with a faculty member to serve as an adviser no later than the end of the first semester of registration in the program. A change in the adviser will be coordinated by the director of graduate studies in zoology at the request of the student and with the approval of the current and prospective professors.

Following selection and approval of an adviser, an advisory and research committee is to be recommended to the director of graduate studies in zoology for approval by the graduate dean. For the master's degree, the committee shall consist of a minimum of 3 members, 1 of whom may be from outside the department, with the adviser serving as chair.

For the doctoral degree the advisory and research committee shall consist of 5 faculty members, one of whom must be from outside of the department. The adviser shall serve as chair.

A program of course work and research tools as required must be approved by the advisory and research committee, and made a part of the student's departmental file no later than the first week of the second semester of registration in the program.

A research plan approved by the student's advisory and research committee must be placed in the student's departmental file prior to registration for ZOOL 599 or 600 and no later than the end of the second semester of registration in the program.

While pursuing the completion of degree requirements, continuous registration is required until such time as the degree has been completed. The number of hours required per session will reflect the extent of the demand for use of time and University and department facilities and academic personnel.

Academic Credit

Audited courses may not be counted toward completion of minimum hour requirements toward the degree. No course with a grade below *C* will fulfill minimal requirements of the degree. A petition for the use of transfer credits must be approved by the student's advisory and research committee and submitted to the

director of graduate studies in zoology for forwarding to the dean of the Graduate School for approval.

Master of Science Degree

A minimum of 30 hours of graduate credit (15 hours at the 500 level) is required beyond the bachelor's degree, including at least 18 hours of graded coursework, 6 hours of ZOOL 599, and one of the following tools: a foreign language either by completion of FL 488 with a grade of A or B or a score of at least 465 on the ETS proficiency exam, or two semesters of one of the following: statistics, computer science, mathematics, biochemistry or biotechnology. The entire program of study must be approved by the student's advisory committee and the department chair.

A thesis embodying results and analysis of original research and a final examination are required.

Final Examination.

1. Each candidate for a master's degree is required to pass a final examination. The examination will be oral and should be taken no later than 4 weeks before graduation.
2. The examination consists of 2 parts:
 - a. Presentation of the results of the research in a seminar.
 - b. A closed session of inquiry by the student's advisory and research committee following the seminar.

Graduation. Candidates for a master's degree must follow and fulfill all Graduate School procedures and requirements for processing one's application for graduation.

The Ph.D. Degree

Graduate study and research in the Department of Zoology is organized around three broad, overlapping areas in the life sciences: animal diversity; ecology and environmental science; and genetics, molecular and cell biology. Entering doctoral students are expected to take (or have taken) at least eight courses: three courses from each of any two areas and two courses from the third.

There is no minimal credit-hour requirement beyond the Graduate School's residency and dissertation hour requirements. A student in consultation with an adviser prepares a program of study including courses in the major, in the minor, in areas of deficiency, and to complete the research tool requirement. This program when approved by the student's advisory and research committee is filed with the director of graduate studies in zoology.

Acceptable tools include foreign language, statistics, computer science, mathematics, biochemistry, and biotechnology. Normally two tools are required; however, one tool with exceptional expertise may satisfy the requirement if approved by the student's committee (exception: English as a second language). A student may qualify in a foreign language by completion of FL 488 with a grade of A or B or a score of at least 465 on the ETS proficiency exam. To qualify in statistics, a student must have course work through multiple regression analysis, which is GUID 506 and 507. In computer science a student should take CS 200 and one of the following: 129, 215, 220, and 470. For the tool requirements in mathematics, biochemistry, and biotechnology, the student will arrange a program of 2 or 3 courses acceptable to the advisory committee. Previously acquired skills or knowledge may satisfy the tool requirement if the student passes an appropriate proficiency examination.

A 3.25 grade point average in graduate level course work must be maintained; failure to meet this requirement will result in loss of any financial support pro-

vided by the department. No course in which the grade is below C is acceptable for credit.

Preliminary Examinations. These examinations (oral and written) are taken after the tool requirement and a major portion (approximately 80 percent) of formal course work are completed, usually at the end of the second year of graduate study. The student with the approval of the adviser, advisory committee, and the director of graduate studies in zoology registers with the chair of the preliminary examination committee to take the examination. The written and oral examinations emphasize competence in the area of specialization and the minor.

Dissertation. The nature of the research to be used for the dissertation is established in consultation with the student's adviser, and is approved by the advisory and research committee. An approved copy of the research proposal is filed with the director of graduate studies in zoology. The student is required to register for a minimum of 24 semester hours in ZOOL 600, Dissertation Research. The dissertation is evaluated by the student's advisory and research committee, reviewed for approval by the chair and submitted to the graduate dean for final approval.

Final Examination. Upon approval of the dissertation by the student's advisory and research committee, the candidate requests the director of graduate studies in zoology to schedule a seminar and a final examination. Following the seminar, the final examination over the dissertation is conducted by the student's committee.

Graduation. Candidates for a Ph.D. degree must follow and fulfill all Graduate School procedures and requirements for processing one's application for graduation.

Courses (ZOOL)

Students enrolled in zoology courses may incur field trip or laboratory expenses of \$5 to \$25.

400-3 Cell Biology of Development. Cellular molecular mechanisms of embryogenesis and differentiation. Examination of the cell as a component of interacting tissues constituting the developing organism. Prerequisite: 300 or Biology 309, or advanced standing in Life Sciences or consent of instructor.

401-3 Developmental Neurobiology. This course presents a survey of the basic principles that underlie the development of the nervous system, including an examination of the important questions and issues currently being studied by neuroembryologists. Prerequisite: advanced standing in biology/science or consent of instructor.

402-3 Natural History of Invertebrates. Introduction to ecology, intraspecies communication and interspecies relationships of invertebrate animals. Recommended for teacher preparation programs. Two lectures and one 2-hour laboratory per week. Offered Fall term. Prerequisite: 220a.

403-3 Natural History of Vertebrates. Life histories, adaptations, and identification of fish, amphibians, reptiles, birds, and mammals, emphasizing local species. Recommended for teacher preparation programs. One lecture and two 2-hour laboratories per week. Offered Spring

semester. Prerequisite: 220b or consent of instructor.

404-3 Evolutionary Biology. Concepts and principles of modern evolutionary theory at a level appropriate for upper-division majors and graduate students in any biological science. Prerequisite: 220a,b or equivalent and Biology 305 or consent of instructor.

405-3 Systematic Zoology. Theory and procedure of classification; population taxonomy; variation and its analysis; rules of zoological nomenclature; taxonomic publication. Three one-hour lecture-discussion meetings per week. Prerequisite: 220a,b and consent of instructor.

406-3 Protozoology. Taxonomy, cytology, reproduction, and physiology of unicellular animals. Laboratory methods for culture and study. One lecture and two 2-hour laboratories per week. Offered Fall term. Prerequisite: 220a.

407-4 Parasitology. Principles, collection, identification, morphology, life histories and control measures. Two lectures and two 2-hour laboratories per week. Offered Spring term. Prerequisite: 220a.

408-3 Herpetology. Taxonomic groups, identification, morphology, and natural history of amphibians and reptiles. One lecture and two 2-hour

laboratories per week. Offered Fall term. Prerequisite: 220b.

409-4 Vertebrate Histology. Microscopic structure of organs and tissues with emphasis on mammalian material. Two lectures and two 2-hour laboratories per week. Offered Spring term. Prerequisite: 10 to 12 semester hours of biological science.

413-4 The Invertebrates. Structure, phylogeny, distinguishing features and habitats of the invertebrates. Two lectures and two 2-hour laboratories per week. Offered Spring term. Prerequisite: 220a.

414-4 Freshwater Invertebrates. Taxonomic groups, identification, distribution and habitats of the North American freshwater invertebrate fauna. Two lectures, two 2-hour laboratories per week. Offered Fall term. Prerequisite: 220a.

415-3 Limnology. Lakes and inland waters; the organisms living in them, and the factors affecting these organisms. Two lectures per week and one four-hour laboratory alternate weeks. Offered Fall term. Prerequisite: 220a.

418-4 Comparative Vertebrate Anatomy. The comparative structure and evolution of vertebrate organ systems. Two lectures and two 2-hour laboratories per week. Offered spring term. Prerequisite: 220b.

421-4 Histological Techniques. Methods of preparing animal tissue for microscopic study and learn theories of staining and histochemistry. One lecture and two three-hour laboratories per week. Offered Fall term. Prerequisite: ten semester hours of biological science.

426-3 Comparative Endocrinology. Comparison of mechanisms influencing hormone release, hormone biosynthesis and the effects of hormones on target tissues. Include ablation and histology of glands and chemical and bio-assays with vertebrates and invertebrates. Two lectures and one two-hour laboratory per week. Offered Spring term.

458-3 Issues in Aquatic Ecology. With its primary focus on freshwater ecosystems, this course will cover important issues in aquatic ecology including: surface water and groundwater quality, global warming, use of fish hatcheries, exotic species, genetically manipulated organisms, stream habitat degradation, dams, diversions, the Great Lakes, local issues. Prerequisite: Biology 307 or consent of instructor.

460-2 Upland Game Birds. Biological overview and identification of upland and shoreline game birds plus raptors and selectively-managed species. One lecture and one two-hour laboratory per week; there will be up to two Saturday field trips. Offered Spring term. Prerequisite: 220b or consent of instructor.

461-3 Mammalogy. Taxonomic characteristics, identification, and natural history of mammals. Two one-hour lectures and one two-hour laboratory per week. Offered Spring semester. Prerequisite: 220b.

462-3 Waterfowl. Identification, life history, ecology, and management. Two lectures and one two-hour laboratory per week; there will be three or four Saturday field trips. Prerequisite: 220b or consent of instructor.

463-3 Game Mammals. Natural history and management. Two lectures and one two-hour lab-

oratory per week. Prerequisite: 220b or consent of instructor.

464-3 Wildlife Administration and Policy. Responsibilities of private, state, and federal natural resources management agencies. Legal and political processes in areas of wildlife and natural resources. Three lecture per week. Offered Spring term. Prerequisite: consent of instructor.

465-3 Ichthyology. Taxonomic groups, identification, and natural history of fishes. Two lectures and one two-hour laboratory per week. Offered Spring term. Prerequisite: 220b.

466-3 Fish Management. Sampling, age and growth, dynamics, habitat improvement, manipulation of fish populations, and management of freshwater and marine fish stock. Two lectures per week and one four-hour laboratory alternate weeks. Offered Fall term. Prerequisite: ten hours of biological science or consent of instructor.

467-3 Ornithology. Classification and recognition of birds and the study of their songs, nests, migratory habits and other behavior. One lecture and one four-hour laboratory per week. Offered Spring term. Prerequisite: 220b.

468-3 Wildlife Biology Principles. Basic concepts of wildlife ecology and management. Includes lectures on ecological physiology, population dynamics and wildlife management strategies. Prerequisite: Biology 307 and seven other semester hours of biological science.

469-3 Wildlife Techniques. Field-oriented course with instruction in techniques for management of wild species and their habitat. One 1 1/2-hour lecture and one 3-hour laboratory per week, two of which may be field trips on Saturdays. Prerequisite: 10 semester hours in Biology and/or Zoology or consent of instructor.

471-4 Entomology. Structure, classification, and life histories of insects. Two lectures and two 2-hour laboratories per week. Offered Fall term. Prerequisite: 220a.

473-4 Aquatic Entomology. Structure, classification and biology of aquatic insects. Two lectures and two 2-hour laboratories per week. Offered Fall semester. Prerequisite: 220a.

475-3 Advanced Cell Biology. (Same as Plant Biology 475) Cell structure at molecular and cytological levels. Includes discussions of research methods, and plasma membrane, cell exterior and recognition, the endomembrane system and related organelles, self-replicating organelles, the cytoskeleton, nuclear structure and function in cell replication, cell differentiation and response, and eukaryotic cell evolution. Prerequisite: Biology 306 or equivalent.

476-2 Advanced Cell Biology Laboratory. (Same as Plant Biology 476) Laboratory course to accompany 475. Light and electron microscopy, cell culturing, biochemical methods, and experimental protocols are used to study the structure of cell membranes, intracellular organelles, including the Golgi apparatus, ER, mitochondria, plastids, lysosomes, the cytoskeleton and nucleus. Prerequisite: 475 or concurrent enrollment.

477-3 Fish Culture. Production of game, food and bait fishes. Design of facilities, chemical and biological variables, spawning techniques, diseases and nutrition. Two lectures per week and one four-hour laboratory alternate weeks. Prereq-

quisite: ten hours of biological science or consent of instructor.

478-3 Animal Behavior. Biological basis of the behavior of animals. Two lectures and one two-hour laboratory per week. Offered Fall semester. Prerequisite: one year of biological science or permission of instructor.

480-3 to 4 Research Methods in Animal Behavior. Skills relevant to conducting research in animal behavior. Guided self-instructional format, with two 2.5-hour periods scheduled weekly, primarily as question/answer and evaluation sessions. Offered Spring semester. Prerequisite: 478 and a course in statistics is recommended, or permission of instructor.

485-2 to 4 Special Topics in Zoology. Examination of topics of special interest not available in other departmental courses. Offered in response to student need and faculty availability. Prerequisite: consent of instructor.

496-2 to 4 Zoology Field Studies. A trip of four to eight weeks to acquaint students with animals in various environments and with methods of field study, collection, and preservation. Offered Fall, Spring, Summer terms. Prerequisite: consent of department.

497-3 Helminthology. Identification, structure, physiology, and life history of parasitic helminths. Three lectures per week. Prerequisite: 407.

500-3 Molecular Evolution. (Same as Plant Biology 504) Survey of the theory and processes of organic evolution at the level of protein and DNA in animals. Quantitative analysis of empirical genetic information; methods of phylogenetic inference from molecular data. Three lectures per week. Prerequisite: 404 or equivalent.

510-3 Seminar on Evolution. Current topics in evolutionary biology and systematics. Format is student presentations and group discussions of relevant literature and research. Prerequisite: consent of instructor.

514-3 Advanced Entomology. Morphology, physiology, systematics, and distribution of insects. One lecture and two 2-hour laboratories. Prerequisite: 471.

520-3 Advanced Invertebrates. The nature and life of invertebrate animals with emphasis on comparative form, function, behavior and occurrence. Three two-hour meetings per week. Prerequisite: consent of instructor.

521-3 Stream Ecology. The physical, chemical, and biological factors affecting organisms in streams. Two lectures per week and one four-hour laboratory alternate weeks. Prerequisite: 415 and consent of instructor.

525-3 Cytology. An analysis of the subcellular and cytochemical organization of the cell. Structural-functional aspects of organelles, membranes, and other cellular components, their relationship to the metabolic nucleus, substructural organization of hereditary material, and subcellular aspects of mitosis and meiosis are emphasized. Two lectures and one laboratory per week.

530-3 Wildlife Diseases. Introduction to the causes and nature of diseases of wildlife with emphasis on wild mammals and birds. The relationship of disease to the population ecology of species will be emphasized further. Two lectures and one two-hour laboratory per week. Offered Spring term. Prerequisite: consent of instructor.

532-3 Wildlife Toxicology. Fate and effects of environmental toxicants in wildlife. Review of descriptive and mechanistic toxicology for environmental contaminants. Investigation of the relationship between individual and community responses to toxicant exposure. Examination of current hazard assessment protocols and associated regulatory agencies. Prerequisite: 468a or consent of instructor.

534-3 Wildlife Habitat Analysis. Physical, biological and behavioral factors that influence habitat use and selection by wild vertebrate populations. Landscape level analysis of wildlife habitats. Modeling habitat suitability, environmental impact and wildlife population dynamics with habitat data. Application and use of remote sensing and geographic information systems in natural resource management and habitat evaluation. One two-hour lecture and one two-hour laboratory per week. Prerequisite: consent of instructor.

540-3 Factors in Animal Reproduction. Genetic and physiological factors in determination, differentiation and modification of sex in animals. Three lectures a week. Prerequisite: consent of instructor.

550-3 Developmental Gene Regulation. Gene regulation during animal development and its analysis. Describes the hierarchy of gene interactions that lead to cell fate determination. The function and regulation of transcription factors and signal transduction proteins are covered. Methods of investigation are discussed. Examples are taken from yeast, *Drosophila*, *Xenopus*, and mouse. Three lectures per week. Prerequisite: Biology 305 or 309 or equivalent, or by permission.

564-1 to 2 Fish Culture Techniques. Practical experience in fish culture techniques. Course consists of modules which require student participation in hands-on experience, (e.g., spawning, induction of spawning, production of fry, operation and grading, diagnosis and treatment of parasites and diseases, and transporting of fish). One credit for completion of two modules. Register any semester, one year to complete elected number of modules. Written report and examination required for each module. Cost incurred by student varies with modules selected. Prerequisite: 566 or consent of instructor.

565-3 Environmental Physiology of Fish. Synthesis of effects of pollutants on physiological processes of fish. Course begins with an overview of fish physiology. Topics include: concepts, methods, and measurements in aquatic toxicology; histopathological, physiological, and behavioral responses to pollutants; and toxicity of heavy metals, organics, particulates and other pollutants. Three lectures per week. Prerequisite: 465 or consent of instructor.

568-2 Fish Stock Assessment. Methods of characterizing fish populations including mortality rates, age growth analysis, population sampling, yield models, habitat evaluation procedures and creel survey techniques. Two one-hour meetings per week. Prerequisite: 466 or consent of instructor.

569-3 Advanced Fisheries Management. Advanced topics related to the management of fisheries including urban fisheries, native American fisheries, freshwater commercial fisheries, Great Lakes fisheries, impact of power generating

plants on fishes, and in-depth consideration of indices of community structure and current topics in fish management. Three lectures per week. Prerequisite: 466 or consent of instructor.

570-3 Advanced Fish Culture. Methods for the production of coldwater, coolwater, warmwater and tropical species. Three lectures a week. Prerequisite: 566 or consent of instructor.

573-3 Physiological Ecology. The role of physiological, morphological, and behavioral adaptations and adjustments in the ecology of vertebrate organisms with special emphasis on examining the energy balance and environment as it influences vertebrate ecology. Two hours of lecture and one two-hour laboratory. Prerequisite: Biology 307 or equivalent, and consent of instructor.

577-2 Population Ecology. Principles of population dynamics as related to animals. Two lectures per week. Prerequisite: consent of instructor.

578-3 Population Genetics. Genetic structure of populations, factors causing changes and principles governing rate and direction of change. Three lectures per week. Prerequisite: Biology 305 and consent of instructor.

579-3 Molecular Genetics Techniques. Practical experience in molecular genetics techniques currently used in zoology for population genetic analysis and for molecular systematics. Emphasis will be on methods for allozyme, mtDNA and nuclear DNA analysis. Class projects will focus on experimental design, data collection and analysis. Prerequisite: consent of instructor.

581-2 Zoological Literature. Diversity and functions of zoological literatures, scientific writing and the publication process. Two lectures per week. Prerequisite: graduate status in a biological science.

582-1 to 4 (1,1,1,1) Graduate Zoology Seminars. Special topics in zoology. Consult department for each semester's topic. One meeting per week. Prerequisite: consent of instructor and department.

583-1 Teaching Zoology in College. Methods, practices, and objectives in teaching zoology at the college/university level. Designed as part of the apprenticeship program for preparation of college teachers. Required of departmental teaching assistants. One hour lecture per week. Graded *S/U* only. Prerequisite: graduate status in a biological science.

584-3 Fish Genetics. Genetic principles and their application to management and culture of fish. Course includes an overview of biochemical and molecular genetics, conservation genetics, genomic manipulations and quantitative genetics. Prerequisite: Biology 305 or consent of instructor.

585-36 (3 per topic) Seminar. Advanced study of special topics in zoology. (a) Seminar in animal behavior. (b) Seminar in neurobiology of metazoa. Survey of the cytology and histology of nerve cells,

and the sheath elements separately as they appear in organized tissues of metazoa. (c) Seminar in ecosystems. (d) Seminar in wetland ecology. (e) Seminar in wildlife ecology: impact of land use. (f) Seminar in fish biology. Survey of fish biology and ecology dealing largely with topics not covered in 465. Life history strategies, physiology and other fundamental biological features of fishes will be covered in some depth. Prerequisite: 465. (g) Seminar in parasitology. (h) Seminar on the amphibia. (j) Seminar in developmental biology. Detailed coverage of current topics of interest in developmental biology; the course will emphasize interacting systems in the development of both vertebrates and invertebrates, from the molecular to the tissue levels. Prerequisite: 300, Biology 309, or equivalent. (z) Seminar in selected topics. Prerequisite: consent of instructor or department.

593-1 to 12 Individual Research. Investigation in zoology other than those for theses. Only three hours may be credited toward a degree. Some costs may be borne by the student.

596-1 to 66 (1 to 12 per semester) Research. Graded *S/U* only. Credit may not be used toward a degree in Zoology. Prerequisite: consent of instructor.

597-1 to 12 Advanced Zoological Techniques. Individualized techniques or experimental procedures to prepare for dissertation research. May be taken at another university. Number of credits determined by committee. Graded on *S/U* basis following final report submitted to major adviser. Prerequisite: admission to Ph.D. degree program in Zoology and consent of major adviser.

598-1 to 6 Research Paper. Research paper for Master of Science degree for Biological Sciences major. Some cost may be borne by the student. Graded *S/U* only. Prerequisite: consent of instructor.

599-1 to 12 Research and Thesis. Thesis for Master of Science degree. Only six hours may count toward the degree. Some cost may be borne by student. Graded *S/U* only. Prerequisite: consent of instructor.

600-1 to 32 (1 to 16 per semester) Research and Dissertation. Research and dissertation for Doctor of Philosophy degree. Some cost may be borne by student. Graded *S/U* only. Prerequisite: consent of instructor.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

Other Graduate Faculty

Some faculty listed below may not be directly affiliated with a graduate program but have been awarded graduate faculty status to perform certain functions at the graduate level. These individuals are arranged according to their unit affiliation.

The first of the two dates listed with the name of a faculty member indicates the year in which the highest degree was earned; the second date indicates the year when the person first became a faculty member at Southern Illinois University at Carbondale.

Library Affairs

Bauner, Ruth E., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1978; 1956.

Black, George W., Jr., Professor, *Emeritus*, M.S.L.S., Columbia University, 1966; 1968.

Brown, F. Dale, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1978; 1970.

Cox, Shelley M., Associate Professor, M.A.L.S., University of Chicago, 1973; 1973.

Fox, James W., Assistant Professor, M.L.S., University of North Carolina, 1975; 1975.

Harwood, Judith A., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1981; 1969.

Hostetler, Jerry, Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1977; 1968.

Koch, Dave V., Associate Professor, M.A., Southern Illinois University at Carbondale, 1963; 1959.

Matthews, Elizabeth W., Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1972; 1964.

Person, Roland C., Professor, Ph.D., Southern Illinois University at Carbondale, 1982; 1970.

Peterson, Kenneth G., Professor, *Emeritus*, Ph.D., University of California, Berkeley, 1968; 1976.

Russell, Thyra K., Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1987; 1972.

Simon, John Y., Professor, Ph.D., Harvard University, 1961; 1964.

Snyder, Carolyn, Professor and *Dean* of Library Affairs, M.L.S., University of Denver, 1965; 1991.

Starratt, Jay, Associate Professor, M.L.S., Emory University, 1980; 1987.

Stubbs, Walter R., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1983; 1968.

School of Medicine

CARBONDALE AND SPRINGFIELD CAMPUSES

Birtch, Alan G., Professor, M.D., Johns Hopkins University, 1958; 1972.

Borkon, Eli, Professor, *Emeritus*, M.D., University of Chicago, 1937; 1971.

Chavez, Daniel J., Associate Professor, Ph.D., Colorado State University, 1979; 1981.

Clough, Richard W., Associate Professor, Ph.D., University of Nebraska, Medicine, 1983; 1987.

Colvin, Robert H., Assistant Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1971; 1972.

Dayringer, Richard, Professor, Th.D., New Orleans Baptist Theological Seminary, 1968; 1974.

Estavillo, Jaime A., Professor, Ph.D., University of California, 1970; 1975.

Evans, Miles S., Associate Professor, M.D., M.S., University of Louisville School of Medicine, 1982; 1990.

Folse, J. Roland, Professor, M.D., Johns Hopkins University, 1958; 1971.

Getto, Carl, Professor and *Dean* of the School of Medicine, M.D., Loyola University Stritch School of Medicine, 1972; 1993.

Hawe, Anthony, Clinical Associate Professor, M.B., Ch.B., Liverpool University, 1959; 1971.

Jackson, Robert W., Professor and *Executive Associate Dean*, Ph.D., Purdue University, 1963; 1974.

Johnson, Robert Peter, Professor, *Emeritus*, M.D., University of Illinois, 1950; 1972.

Kabisch, William T., Professor, *Emeritus*, Ph.D., University of Chicago, 1954; 1970.

Khadori, Nancy, Associate Professor, M.B.B.S., Government Medical College; 1972; 1989.

Koschmann, Timothy, Associate Professor, Ph.D., Illinois Institute of Technology, 1987; 1988.

Lacey, Ella, Associate Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1979; 1972.

Metzmaker, Charles O., Professor, *Emeritus*, M.D., University of Illinois, 1947; 1971.

Moy, Richard H., Professor, *Emeritus*, M.D., University of Chicago, 1957; 1970.

Parr, Margaret, Assistant Professor, Ph.D., Columbia University, 1966; 1978.

Parr, Earl L., Professor, Ph.D., Rockefeller University, 1968; 1981.

Pearson, Emmet F., Clinical Professor, *Emeritus*, M.D., Washington University, 1930; 1971.

Rabinovich, Sergio, Professor, M.D., University of San Marcos, 1953; 1973.

Roddick, J. W. Jr., Professor, *Emeritus*, M.D., Northwestern University, 1950; 1972.

Strano, Alfonso J., Clinical Professor, M.D., University of Texas, 1960; 1974.

Travis, Terry, Professor, M.D., Kansas University, 1964; 1972.

Zook, Elvin G., Professor, M.D., Indiana University, 1963; 1973.

College of Technical Careers

Bleyer, Dorothy R., Associate Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1977; 1957.

Clarke, David S. C., Professor, M.S., Catholic University, 1980; 1981. Architecture, urban design, business, and economics.

Davis, Diane, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1990; 1973. Business and office occupation training in education.

Ellner, Jack R., Professor, *Emeritus*, Ph.D., New York University, 1969; 1971.

Evans, Candy, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1992; 1989. Educational administration.

Gonzenbach, Nancy, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1990; 1975. Business and office occupation training in education.

Grace, Linda, Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1985; 1981. Education.

Henry, Janice S., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1987; 1983. Vocational education and business.

Isberner, Fred R., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1984; 1983. Health education.

Morgan, Barbara, Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1992; 1988. Business and office occupation training in education.

Morse, Pauletta, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1989; 1976. Business and office occupation training in education.

NewMyer, David A., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1987; 1977. Education.

Rehwalddt, Susan, Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1982; 1987. Organizational communication, professional development, gender issues, higher education administration.

Rutledge, Clifton D., Associate Professor, *Emeritus*, M.Arch., Kansas State University, 1968; 1965.

Schafer, Joseph A., Associate Professor, Aviation Technology, B.S., Lewis College, 1960.

Soderstrom, Harry, Professor, *Emeritus*, M.S., Bradley University, 1952; 1962.

Stitt, Beverly, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1980; 1982. Business and office occupation training in education.

Troutt-Ervin, Eileen, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1986; 1976. Occupational education.

Vitello, Elaine M., Professor and *Dean*, College of Technical Careers, Ph.D., Southern Illinois University at Carbondale, 1977; 1977.

Other Graduate Courses

The 400- and 500-level courses listed below are offered by Southern Illinois University at Carbondale for graduate credit, but they are not linked to a specific department.

Agriculture

E-mail: gradinfo@siucvmb.siu.edu

Courses (AGRI)

401-3 Fundamentals of Environmental Education. (Same as Forestry 401 and Recreation 401.) A survey course designed to help education majors develop an understanding of environmental problems and an awareness of how these types of problems can be handled both inside and outside the classroom. Prerequisite: ten hours of biological science, or ten hours of recreation and/or education, or consent of instructor.

423-3 Environmental Interpretation. (Same as Forestry 423 and Recreation 423.) Principles and techniques of natural and cultural interpretation. Two hours lecture, three hours laboratory. Approximately \$10 cost for field trips. Prerequisite: ten hours biological science or ten hours of recreation.

450-2 Farming Systems Research and Development. An introduction to farming systems, which is an interdisciplinary approach to agricultural research and development emphasizing small farms. The whole farm is viewed as a system of interdependent components controlled by the farm household. Focuses on analyzing interactions of these components as well as the physical, biological and socioeconomic factors not controlled by the household. Techniques of analysis are applicable domestically and internationally.

481-1 International Agricultural Seminar. Discussion of special topics relating to worldwide agricultural development. Prerequisite: consent of instructor.

Engineering Technology

E-mail: shellie@engr.siu.edu

Courses (ET)

There is no graduate program offered through engineering technology. See manufacturing systems for graduate program description. Four-hundred-level courses in this listing may be taken for graduate credit unless otherwise indicated in the course description.

The student is required to purchase photographs and maps for certain courses, and a suitable slide rule is strongly recommended for most courses. Cost is approximately \$10 to \$25.

401-3 Refrigeration and Air Conditioning. Applications of thermodynamics and heat flow to air conditioning systems. Heating and cooling load analysis. Principles of human comfort. Discussion of various refrigeration and air conditioning cycles and their application to laboratory simulators. Laboratory. Prerequisite: 313.

403-8 (4,4) Electronics Technology. (a) Fundamental theory and operation of semiconductor diodes and bipolar transistors, incremental models for transistors, biasing, stability, and feedback of single and multistage amplifiers. Parameters and applications of field-effect transistors, optoelectronic devices, thyristors, unijunction transistors and amorphous semi-conductors. Laboratory. **(b)** Parameters and applications of operational amplifiers, linear integrated circuits, monolithic voltage regulators, and digital integrated circuits. Laboratory. Must be taken in a,b sequence. Prerequisite: 304b.

413-4 Field Survey Problems. Perform extensive field projects in the areas of engineering, hydrographic, land and control surveying. To be held at Crab Orchard National Wildlife Refuge. Course must be taken concurrently with 414. Prerequisite: 263 and one of 361, 362 or 363.

414-2 Field Project Planning and Computations. Planning, organization, computations, and drafting of field survey projects including the needed mapping utilizing calculators, computers, and CAD. This course must be taken concurrently with 413. Prerequisite: 263 and one of 361, 362 or 363.

415-4 Elementary Structural Design. Introduction to structural properties of steel and reinforced concrete. Design of basic steel elements: tension members, beams, columns, and connections. Basic design of reinforced concrete elements: beams, columns, and footings. Use of AISC and ACI codes. Prerequisite: 202, 311 (or concurrent enrollment), 315.

424-6 (3,3) Power Systems Technology. (a) Fundamentals of basic power plant operation, economics and equipment. Advanced Rankine cycles and cogeneration. Fuel classification and combustion principles. Alternative energy source and conversion. Students work concurrently on group design projects emphasizing written and oral deliverables. Prerequisite: 311, 312, 313, 317, 318 **(b)** Alternate energy systems, e.g. wind power, solar energy, geothermal energy, biomass. Extension of 424a with heavier emphasis on optimization of design. Prerequisite: 424a.

426-5 (3,2) Photogrammetry. (a) Cameras and photography; flight planning; mathematical principles of vertical and tilted aerial photographs; ground control methods; extension of control; stereoscopy and parallax; basic instruments, stereo plotters, and latest developments. Laboratory. Prerequisite: 263 or consent of instructor. **(b)** Rectification of tilted photographs; stereoscopic plotting instruments; principles and use of oblique photography; analytic photogrammetry and new concepts. Laboratory. Prerequisite: 426a or consent of instructor.

437-8 (4,4) Communications Systems Technology. (a) Theory and applications of radio frequency transmission lines, waveguides, optical fibers, wave propagation, and antennas. Laboratory. Prerequisite: 304b. **(b)** Theory and applications of analog and digital communications systems. Laboratory. Prerequisite: 403a, 437a.

438-8 (4,4) Continuous and Digital Control Systems. (a) Fundamentals of continuous control systems; equation of electrical, hydraulic and thermal systems; application of Laplace transforms, transfer functions, block diagrams, and flow graphs. Computer implemented graphical analysis and design methods: root locus, frequency response. Nyquist diagrams and compensator design. Continuous systems laboratory. Prerequisite: 304b. **(b)** Fundamentals of digital control systems, Stepper motors, digital data acquisition and interface components, Fourier transforms, Z transforms, and applications of fast Fourier transform. Digital control laboratory. Prerequisite: 438a.

439-4 Microprocessor Applications and Hardware. A study of microprocessor applications and hardware based on microprocessor manufacturer's literature. System configuration, hardware, requirements, typical instruction set, programming, input/output techniques, interfaces and peripheral devices. Prerequisite: 238.

445-3 Computer-Aided Manufacturing. (Same as Industrial Technology 445) Introduction to the use of computers in the manufacturing of products. Includes the study of direct and computer numerical control of machine tools as well as interaction with process planning, inventory control and quality control. Laboratory. Prerequisite: 103 or Industrial Technology 105, Industrial Technology 208 or Engineering Technology 209, and computer programming.

455-3 Industrial Robotics. (Same as Industrial Technology 455) Study of industrial robots and

their applications; pendant and numerical programming of robots. Robotics design including tactile and visual sensors. Technical and psycho-

logical problems of justification, installation and management of robotic systems. Prerequisite: 445.

Industrial Technology

Courses (IT)

There is no graduate degree program offered through industrial technology. See Manufacturing Systems for graduate program descriptions.

410-3 Mining Reclamation. Study of reclamation techniques associated with underground and surface coal mining. Emphasis is placed on the integration and cost trade-offs associated with coal extraction and reclamation as well as federal, state and local regulations. Prerequisite: consent of instructor.

420-3 Coal Preparation and Analysis. Study of coal preparation and blending in association with coal analysis. Design and operation of preparation plants including water management, waste management, coal storage, loading and transportation.

425-3 Advanced Process Design and Control. Extension of other process courses offered. Meets the need of those students who enter the field of manufacturing by giving more emphasis on planning, estimating and control of industrial processes. Laboratory. Prerequisite: 208, 209.

430-3 Health and Injury Control in A Work Setting. (Same as Health Education 430.) Assesses the health and injury control programs present in a work setting. Emphasis given to employee programs in health, wellness and injury control that are effective. Field trips to work sites are included.

439-3 Bulk Materials Handling. Study of the various types of equipment used in the mining industry. Estimation of costs and output of equipment used for excavating and transporting earth materials. Prerequisite: appropriate background.

440-3 Manufacturing Policy. Review of all areas covered by the industrial technology program. Includes problems which simulate existing conditions in industry. Students present their solutions to the class and to the instructor in a formal manner. Prerequisite: 358, 375, 382 and 475.

441-3 Mine-Safety Technology. An in-depth study of the technological implications of the Federal Coal Mine Health and Safety Act. Emphasis is placed on the technology required to operate safely underground coal mines. Prerequisite: appropriate background.

445-3 Computer-Aided Manufacturing. (Same as Engineering Technology 445) Introduction to the use of computers in the manufacture of products. Includes the study of direct and computer numerical control of machine tools as well as interaction with process planning, inventory control and quality control. Laboratory. Prerequisite: Engineering Technology 103 or Industrial Technology 105, Industrial Technology 208 or Engineering Technology 209, and computer programming.

455-3 Industrial Robotics. (Same as Engineering Technology 455) Study of industrial robots and their applications; pendant and numerical programming of robots. Robotics design including tactile and visual sensors. Technical and psychological problems of justification, installation and management of robotic systems. Prerequisite: 445.

460-3 Mining Technology. A capstone course to include all aspects of coal mining. Group projects are assigned on the design and development of a mine with emphasis on cost, productivity, yield, equipment and staffing. Prerequisite: 320, 321, 420 or consent of instructor.

475-3 Quality Control. Use of statistical quality control to improve work product quality. Topics include histogram, Pareto diagrams, control charts, acceptance sampling, process capability, cause and effect diagrams and reliability. Prerequisite: senior standing.

Mass Communication and Media Arts

Courses (MCMA)

497-1 to 6 Special Interdisciplinary Study. Designed to offer and test new and experimental courses and series of courses within the College of

Mass Communication and Media Arts. Prerequisite: consent of instructor.

Medical Education Preparation

No graduate degree program is offered through medical education preparation. Four-hundred-level courses may be taken for graduate credit only with written permission of the relevant department and the graduate dean.

Science

Courses (SCI)

500-2 Science Information Sources. Methods and procedures to efficiently exploit the scientific literature are discussed. The two-hour class discussion will be supplemented by practical exercises in library usage. Prerequisite: consent of instructor.

501-4 (2,2) Research Transmission Electron Microscopy. (a) Theory of design of electron microscope, lenses, vacuum systems, alignment, specimen preparation and darkroom. (b) Practical experience in use of transmission electron microscope and specimen preparation.

502-4 (2,2) Research Scanning Electron Microscopy. (a) Theory of design for scanning electron microscope, lenses, vacuum systems, alignment, specimen preparation for biologists and materials scientists, darkroom. (b) Laboratory practical experience in use of scanning electron microscope and specimen preparation. Laboratory fee \$100.

503A-1 to 3 Science for Elementary School Teachers. In-depth studies of selected basic concepts in general science for teachers of upper-level elementary grades. Topics include cells and simple organisms, characteristics of vertebrates, plate tectonics, solar system, nature of matter

and magnetism. Prerequisite: currently teaching in an elementary school.

503B-1 to 3 Science for Elementary School Teachers. In depth studies of selected basic concepts in general science for teachers of upper-level elementary grades. Topics include human biology, characteristics of high plants, Earth's building blocks, the atmosphere, forces and simple machines. Prerequisite: currently teaching in an elementary school.

504-9 (1 to 3 per topic) Selected Topics in Science for Teachers. The course consists of selected basic concepts in general science for practicing teachers. Within a given semester a broad area is selected within either the biological sciences or the physical/earth sciences. Topics currently include: (a) Basic stream ecology; (b) Biological assessment of polluted streams; and, (c) Wetland ecosystems. Other topics may be added as deemed necessary. This course may not be used for graduate credit by College of Science majors. Prerequisite: currently teaching in an elementary school.

Women's Studies

Courses (WMST)

There is no approved graduate program in women's studies. Four-hundred-level courses may be taken for graduate credit unless otherwise indicated in the course description.

427-3 Women in the Visual Arts. (See Art and Design 457)

442-4 Sociology of Gender. (See Sociology 423)

445-3 Women and the American Political Process. (See Political Science 429)

454-3 to 6 Topics in Women's Literature. (See English 496)

456-3 Philosophical Perspectives on Women. (See Philosophy 446)

463-2 Greek Literature in Translation. (See Classics 405)

476-3 Women and the Criminal Justice System. (See Administration of Justice 460)

490-1 to 6 Readings. Supervised readings in selected content areas of women's studies. Prerequisite: consent of instructor and women's studies coordinator.

491-1 to 6 Special Topics. Concentration on a topic of interest not offered through the regular course listings. Prerequisite: consent of instructor and women's studies coordinator.

492-3 to 6 Seminar in Women's Studies. A synthesizing experience required of seniors completing a minor in women's studies. Activity may

include, but is not limited to, the preparation and presentation of a scholarly paper or the conduct of a research project. Prerequisite: 221 or 222, senior standing, and consent of women's studies coordinator.

493-2 to 6 Individual Research. Exploration of a research project under the supervision of a faculty member having graduate faculty status. The project must result in a written research report which is filed with the coordinator of women's studies. Prerequisite: consent of instructor and coordinator of women's studies and senior standing.

494-1 to 6 Practicum. Supervised practical experience in situations centering on women's issues, organizations, services, etc. The setting may be in one's own field of study or in the general content areas recognized in the women's studies program. Prerequisite: consent of instructor and coordinator of women's studies.

550-3 The Psychological Construction of Gender. (Same as Psychology 550.) This course will focus on the psychology of gender within a feminist perspective and using a feminist ap-

proach. The term feminism, as used here, primarily implies that we will consider information and ideas for more diverse than simple empirical data. In our reading and discussion, we will consider politics, discrimination, the history of science, the history of patriarchy, the development of theory and ideas in general and the development of feminism in particular, and objective versus subjective views of science, and within these contexts, we will consider and study the psychology of gender.

560-3 Gender and Sport. (See Physical Education 560.)

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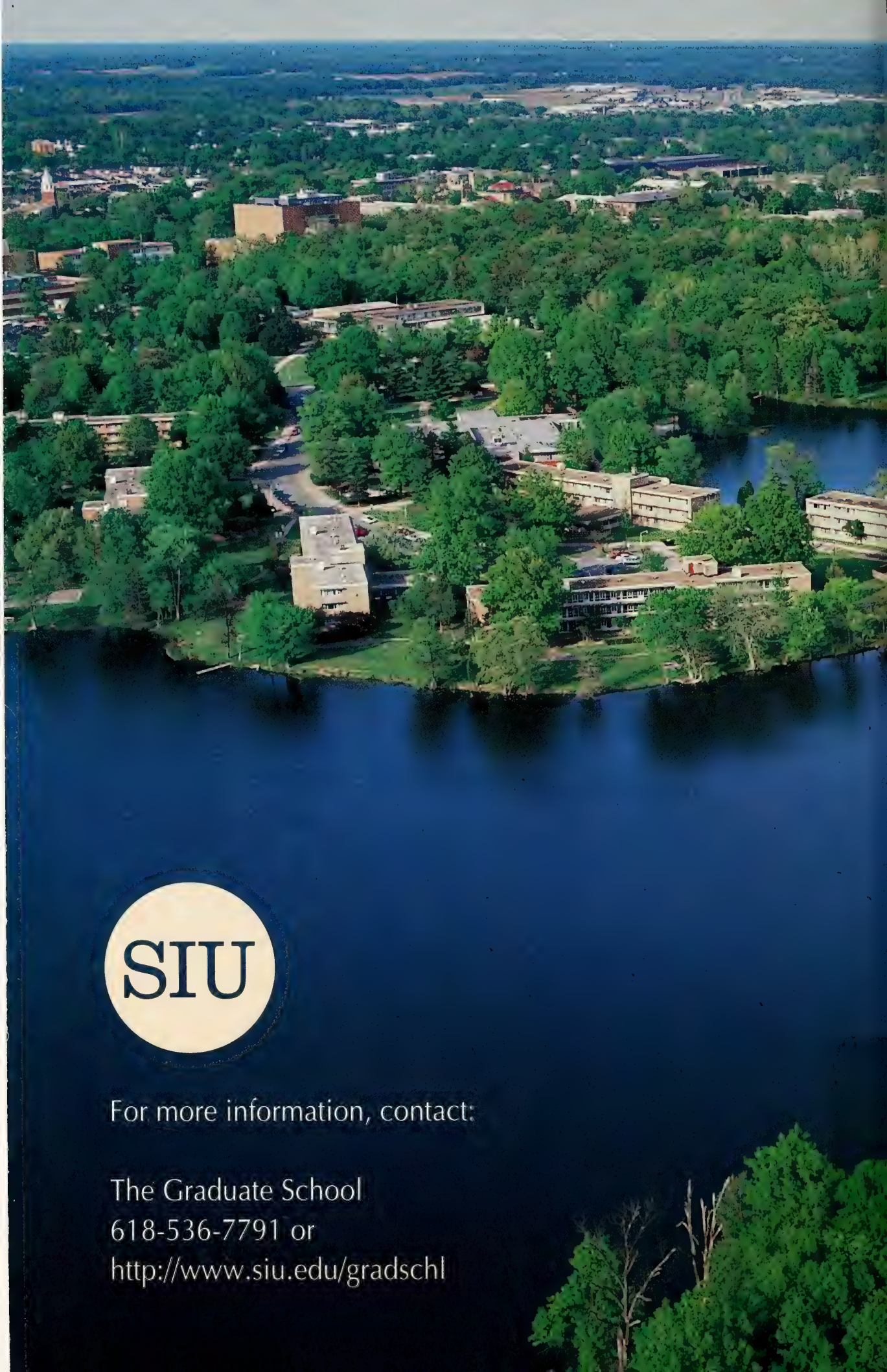
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An aerial photograph of the Southern Illinois University (SIU) campus. The image shows a large body of water in the foreground, with the campus buildings and extensive greenery situated along the shoreline. The campus is densely packed with trees, and several multi-story academic buildings are visible. In the background, more campus buildings and a distant city skyline can be seen under a clear sky.

SIU

For more information, contact:

The Graduate School
618-536-7791 or
<http://www.siu.edu/gradschl>

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P10

Southern Illinois University at Carbondale Bulletin

38/4



Undergraduate Catalog 1997-98

38/4

Southern Illinois University at Carbondale Bulletin

1997-1998 Undergraduate Catalog

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Southern Illinois University at Carbondale Bulletin (USPS 506-080)

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This Catalog

This publication provides information about the University. Primary attention is given to its academic program, rules and regulations, and procedures. Students starting their collegiate training (first graded course from an accredited institution) during the period of time covered by this catalog (summer 1997 through spring 1998) are subject to the curricular requirements as specified herein. The requirements herein will extend for a seven calendar year period from the date of entry for baccalaureate programs and three years for associate programs. If the students have not met their undergraduate educational objectives by that time, they will then become subject to current curricular requirements. Should the requirements contained herein subsequently be changed by the University, students are assured that necessary adjustments will be made so that no additional time is required of them. Where programs include requirements established by agencies external to the University, every effort will be made to follow this same principle so far as possible. Should subsequent curricular requirement changes work to the students' advantage, they may elect to meet the new requirements rather than those contained herein. Should the University find it necessary to discontinue an academic program, the effective date, unless otherwise dictated, will be such that the last regularly admitted class will be able to complete the program in regular time sequence. This means four years for baccalaureate and two years for associate programs. A student who has withdrawn from the University may not be readmitted to a discontinued program.

The Undergraduate Catalog covers in detail questions concerning the undergraduate program of Southern Illinois University at Carbondale for the period from summer 1997 through spring 1998. It supersedes Volume 37, Number 3.

Affirmative Action Policy

It is the policy of Southern Illinois University at Carbondale to provide equal opportunity and educational opportunities for all qualified persons without discrimination on the basis of race, color, religion, sex, national origin, age, handicap, sexual orientation, or marital status. The University is committed to the principles of equal employment and affirmative action and will continue to conduct all personnel actions in accordance with the letter and spirit of applicable state and federal statutes and regulations, including Executive Order 11246 as amended. Personnel actions include, but are not limited to, recruitment, hiring, position assignments, compensations, training, promotions, tenure consideration and award, retention, lay-off, termination, and benefits.

The University recognizes that the barriers of race, sex, and national origin have resulted in the denial to some individuals of their full participation in all societal functions, and is committed to taking affirmative steps aimed at overcoming such historical patterns of discrimination in our society. The University's Affirmative Action Program identifies special actions intended to bring such groups into full participation in all aspects of university life. Through its Affirmative Action Program, Southern Illinois University at Carbondale is committed to: (1) increasing the number of minority individuals and women in all aspects of the University, with special procedures applicable to those positions determined to be underutilized for minorities and women; (2) insuring cultural and educational diversity in the curricula of the University; (3) insuring the removal of barriers to the disabled; and (4) fostering attitudes in the University community that are supportive of the principles of equal opportunity and affirmative action to redress the consequences of past societal discrimination.

The responsibility for coordinating and monitoring compliance with the University's Equal Opportunity/Affirmative Action policy is assigned to the Executive Assistant to the Chancellor. Implementation and assuring compliance with this policy is the responsibility of all academic and administrative units.

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Board of Trustees and Officers of Administration

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University Calendar

Summer Session, 1997

Eight-Week Session Begins
Independence Day Holiday
Final Examinations
Commencement

Monday, June 9, 7:30 A.M.
Friday, July 4
Thursday, July 31 and Friday, August 1
Saturday, August 2

Fall Semester, 1997

Semester Classes Begin
Labor Day Holiday
Fall Recess
Thanksgiving Vacation

Monday, August 25
Monday, September 1
Thursday, October 30 - Sunday, November 2
Saturday, November 22, 12:00 noon - Sunday,
November 30
Monday, December 15 — Friday, December 19

Spring Semester, 1998

Martin Luther King, Jr.'s Birthday
Holiday
Semester Classes Begin
Spring Vacation

Monday, January 19
Tuesday, January 20
Saturday, March 14, 12:00 noon — Sunday, March
22
Sunday, April 5
Monday, May 11 — Friday, May 15
Friday, May 15; Saturday, May 16; and Sunday,
May 17

All breaks officially begin at 10:00 P.M. the night before and end at 7:30 A.M. the morning after the respective beginning and ending dates listed above, unless otherwise noted.

Accommodating Religious Observances of Students

Southern Illinois University at Carbondale will make reasonable accommodation for individual student religious observances. The *Policy Accommodating Religious Observances of Students* appears in its entirety in Chapter 7.

Chapter Reference Guide

The black tabs on the right of this page correspond to black tabs on Chapters 1 through 7 in this catalog.

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General
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Admissions, Tuition and
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Chapter 4

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and Faculty

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Student Services

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University Policies

For information or concerns pertaining to this catalog, contact Patricia Covington, editor, at the Office of Admissions and Records, Southern Illinois University at Carbondale, Carbondale, Illinois, 62901. For access to the Undergraduate Catalog on the World Wide Web visit: <http://www.siu.edu/cwis>.

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1 / General Information



The University

Southern Illinois University

Southern Illinois University is a multicampus university comprising two institutions, Southern Illinois University at Carbondale (SIUC) with a School of Medicine at Springfield and a campus in Niigata, Japan, and Southern Illinois University at Edwardsville (SIUE) with a School of Dental Medicine at Alton and a center in East St. Louis. The University, with an annual operating budget of over \$513 million, enrolls over 34,000 students in programs from two-year technical curricula to Ph.D. programs in 27 fields along with law, medicine and dental medicine. SIU was chartered in 1869 as Southern Illinois Normal University, a teachers' college. In 1947, the name was changed to Southern Illinois University, reflecting the institution's academic expansion. The University also expanded geographically. As early as 1949, SIU began offering off-campus academic courses in the metropolitan East St. Louis area, which led to the eventual development of a separate institution in Edwardsville.

A modern and comprehensive post-secondary educational institution, Southern Illinois University offers a broad range of academic programs that lead to associate, baccalaureate, master's, specialist's, doctoral, and professional degrees.

The instructional, research, and service missions of the two constituent institutions reflect the needs of the geographic areas in which they are located. The University also is committed to serving statewide, national, and international needs. This commitment is reflected in educational activities located off the main campuses in communities throughout the state. It is realized also through research and training exchanges and through world-wide student exchange programs.

A nine-member Board of Trustees governs Southern Illinois University and sets policy that enables the University to carry out its established missions and goals. The president of Southern Illinois University is its chief executive officer and reports to the Board of Trustees. The University chancellors report directly to the president and are responsible for the internal operations of SIUE and SIUC.

Southern Illinois University at Carbondale

Southern Illinois University at Carbondale has taken pride in the quality of its services since its doors were first opened in 1869. Outstanding departments, distinguished faculty, thorough and inspired teaching, and a thoughtful approach to the blending of old wisdom with new knowledge, as well as student services from admission to placement, combine with the University's enviable location to provide a rewarding educational experience.

Every member of the University faculty is a student as well as a teacher bringing the products of research and scholarship into the classroom. The University has many distinguished scholars on its faculty honored by their peers for important contributions to the fields they study. Contact with these hard-working educators offers students the best possible entry into the world of today where ideas and technology mesh. As students progress in their studies they will work along with faculty members and may eventually be able to participate in ongoing research projects or set up projects of their own. Other courses may lead to internships or practicum work on campus or in the area around the University.

Morris Library, a major resource for students and faculty, contains 2,000,000 volumes, 2,600,000 units of microform, and about 13,000 periodical subscriptions. These materials are in open stacks, available to every student. There are also important collections of original research materials, as well as support services such as a map library, records and tapes, and a self-instruction center. Many disciplines require laboratories; some are the traditional variety and some are in orchards, barns, hangars,

machine shops, sound chambers, computer labs, archaeological digs, sewing rooms, kindergartens, and clinics.

The University offers a great variety of services to students. The Office of Admissions and Records audits students' progress and maintains records from entrance to graduation. Financial experts, wise in the field of money for education, work tirelessly to find the right combination of loans, grants, and on-and off-campus employment to keep each student in school. Residence halls are available on campus as are furnished and unfurnished apartments for families. Approved housing for freshmen and sophomores is monitored by the University, and those seeking other housing in Carbondale and the surrounding area have access to advice from housing staff. Counseling services are ready to help students deal with scholastic, family, emotional, medical, legal, or financial problems.

The University provides an aggressive placement program on a number of levels. University Career Services presents career fairs and regular visits by recruiters from large employers. Career counselors are ready to work with students from the time of their enrollment. Seminars and workshops are conducted regularly and a career library is maintained. Some schools and departments have highly successful recruitment programs of their own. Placement services do not stop at graduation — the University keeps a current placement file for every interested graduate, and Alumni Services offers referral assistance.

Carbondale, an economic center of Southern Illinois, has been cited in a recent study as one of the fifty most desirable places to live in the United States. Only a few hours from Chicago, St. Louis, and Memphis, the University sits amid rolling hills, farmlands, and orchards just 60 miles above the confluence of the Mississippi and Ohio rivers. Glaciation deposits of rock have left the area from Carbondale south ruggedly scenic and suitable for a wide range of outdoor activities. Four large recreational lakes are within minutes of the campus; the two great rivers, the spectacular 240,000-acre Shawnee National Forest, and a large number of smaller lakes, state parks, and recreational areas are within easy driving distance. The Mid-South climate is ideal for year-around outdoor activities — even a little cross-country skiing now and then. The campus itself is a marvel of landscaping, planted with native trees and shrubs and blooming flora.

Activities on campus are equally inviting. There are over 300 student organizations — special interest, political, Greek, religious, service — intramurals from baseball to ultimate frisbee, a recreational lake on campus, nine intercollegiate sports programs for women and nine for men, and great varieties of diverting entertainment. A large indoor recreational center contains an olympic-sized pool, weight rooms, game courts of all kinds, diet and exercise programs, instruction, and equipment that can be checked out for outdoor recreation.

At this modern university in a rural setting one can benefit from the best of both worlds — the scenic wonders, the small-town friendliness, the easy access to all the area has to offer, and the resources of a sophisticated faculty and staff with the latest in technological marvels at its command. A Consumer's Report that addresses specific information about the University is available by writing New Student Admissions Services.

Mission Statement

Southern Illinois University at Carbondale, now in its second century, is a major public higher education institution dedicated to quality academic endeavors in teaching and research, to supportive programming for student needs and development, to effective social and economic initiatives in community, regional, and statewide contexts, and to affirmative action and equal opportunity.

Enrolling students throughout Illinois and the United States and from a large number of foreign countries, SIUC actively promotes the intellectual and social

benefits of cultural pluralism, encourages the participation of non-traditional groups, and intentionally provides a cosmopolitan and general education context which expands students horizons and leads to superior undergraduate education.

Seeking to meet educational, vocational, social and personal needs of its diverse population of students and helping them fully realize their potential is a central purpose of the University. Emphasis on accessibility and regional service which creates distinctive instructional, research and public service programs also gives SIUC its special character among the nation's research universities, and underlies other academic developments, such as its extensive doctoral program and the school of medicine and law.

Committed to the concept that research and creative activity are inherently valuable, the University supports intellectual exploration at advanced levels in traditional disciplines and in numerous specialized research undertakings, some of which are related directly to the southern Illinois region. Research directions are evolved from staff and facility strengths, and mature in keeping with long-term preparation and planning.

Even as the University constantly strives to perpetuate high quality in both instruction and research, it continues a long tradition of service to its community and region. Its unusual strengths in the creative and performing arts provide wide-ranging educational, entertainment and cultural opportunities for its students, faculty, staff, and the public at large. Its programs of public service and its involvement in the civic and social development of the region are manifestations of a general commitment to enhance the quality of life through the exercise of academic skills and application of problem-solving techniques. The University seeks to help solve social, economic, educational, scientific, and technological problems, and thereby to improve the well being of those whose lives come into contact with it.

Focus Statement

Southern Illinois University at Carbondale offers a full range of baccalaureate programs, is committed to graduate education through the doctoral degree, and gives high priority to research. It receives substantial federal support for research and development and annually awards a significant number of doctoral degrees balanced among selected liberal arts and sciences disciplines and professional programs. In addition to pursuing statewide goals and priorities, Southern Illinois University at Carbondale:

- strives to develop the professional, social, and leadership skills expected of college students and to improve student retention and achievement;
- supports the economic, social, and cultural development of southern Illinois through appropriate undergraduate, graduate, and professional education and research;
- develops partnerships with communities, businesses, and other college and universities, and develops utilization of telecommunications technologies;
- cultivates and sustains a commitment in research and instruction to problems and policy issues related to the region and the state's natural resources and environment;
- strives to meet the health care needs of central and southern Illinois through appropriate health-related programs, services, and public health policy; and
- cultivates and sustains diversity through a commitment to multiculturalism, including international programming.

Accreditations and Affiliations¹

North Central Association of Colleges and Schools	Federal Aviation Administration
Accreditation Council of the American Assembly of Collegiate Schools of Business	Federation of Schools of Accountancy
Accrediting Council on Education in Journalism and Mass Communication	Foundation for Interior Design Education Research
American Association for Accreditation of Laboratory Animal Care	Honors Council of the Illinois Region
American Association of Airport Executives	House of Delegates of the American Bar Association
American Association of Museums	Illinois Alcohol and Other Drug Abuse Association, Inc.
American Bar Association	Illinois State Board of Education
American Board of Funeral Service Education	Liaison Committee on Medical Education of the American Medical Association and Association of American Medical Colleges
American Chemical Society	National Academy of Early Childhood Programs sponsored by the National Association for the Education of Young Children
American Library Association	National Association of Industrial Technology
American Psychological Association	National Association of Schools of Art and Design
American Speech-Language-Hearing Association, Educational Standards Board	National Association of Schools of Music
Association of American Law Schools	National Association of Schools of Public Affairs and Administration
Association of American Publishers	National Association of Schools of Theatre (NAST)
Association of American University Presses	National Athletic Trainers Association
Association of 1983 Collegiate Schools of Architecture	National Automotive Technicians Education Foundation
Commission on Accreditation in Physical Therapy Education	National Collegiate Honors Council
Commission on Accreditation of Rehabilitation Institutes	National Council for Accreditation of Teacher Education
Commission on Dental Accreditation of the American Dental Association	National Court Reporters Association
Committee on Allied Health Education on Accreditation and the Joint Review Committee for Respiratory Therapy Education	National Fire Protection Association
Committee on Allied Health Education on Accreditation of the American Medical Association and the Joint Review Committee for Radiologic Technology Education	National Institute for Automotive Service Excellence
Connecticut State Board of Education	National Recreation and Parks Association
Council for Accreditation for Counseling and Related Educational Programs	Photo/Marketing Association International
Council on International Education Exchange	Servicemembers Opportunity Colleges
Council on Rehabilitation Education	Society of American Foresters
Council on Social Work Education	University Aviation Association, Airway Science Curriculum Committee
Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology	University Council for Vocational Education
	Upper Midwest Honors Council

¹To determine the agency which accredits a specific program, consult the information on that program in this catalog.

Faculty

The University faculty is dedicated to excellence in teaching and to the advancement of knowledge in a wide variety of disciplines and professions. Many faculty members are well known both nationally and internationally for their many varied research contributions. The Undergraduate Catalog lists the numerous programs offered by the faculty and, in addition, in Chapter 8 of this catalog the faculty members are listed by departments in which they are appointed.

Undergraduate Curricula

The undergraduate majors and minors offered by Southern Illinois University at Carbondale are listed below in alphabetical order. Also indicated is whether a major,

a minor, or both are offered. The academic unit which offers the major is listed as is the degree the student would expect to receive upon graduation. If a major may be completed in more than one academic unit, the other units are listed on additional lines. For example, the biological sciences major is offered through the College of Science. Students planning to teach biological sciences may also complete the major in the College of Education. The requirements for each of the programs listed below are explained in Chapter 4 of this bulletin. The degree abbreviations used are: A.A.S., Associate in Applied Science; B.A., Bachelor of Arts; B.F.A., Bachelor of Fine Arts; B.Mus., Bachelor of Music; and B.S., Bachelor of Science.

In addition to the majors and minors listed, preprofessional programs may be completed in dentistry, law, medicine, nursing, optometry, pharmacy, physical therapy, physician assistant, podiatry, public health, and veterinary science.

SUBJECT	MAJOR	MINOR	ACADEMIC UNIT	DEGREE
Accounting	X	X	College of Business and Administration	B.S.
Administration of Justice	X	X	College of Liberal Arts	B.A.
Advanced Technical Studies	X		College of Applied Sciences and Arts	B.S.
Aerospace Studies		X		
African Studies		X	College of Liberal Arts	
Aging Studies		X	College of Liberal Arts	
Agribusiness Economics	X	X	College of Agriculture	B.S.
Agriculture, General	X	X	College of Agriculture	B.S.
Animal Science	X	X	College of Agriculture	B.S.
Anthropology	X	X	College of Liberal Arts	B.A.
Aquatics ³		X	College of Education	
Architectural Studies ⁹	X		College of Applied Sciences and Arts	B.S.
Army Military Science		X		
Art	X	X	College of Liberal Arts	B.A., B.F.A.
	X		College of Education	B.S.
Asian Studies		X	College of Liberal Arts	
Athletic Training ³		X	College of Education	
Automotive Technology ⁹	X		College of Applied Sciences and Arts	A.A.S. B.S.
Aviation Flight ⁹	X		College of Applied Sciences and Arts	A.A.S.
Aviation Maintenance Technology ⁹	X		College of Applied Sciences and Arts	A.A.S.
Aviation Management	X		College of Applied Sciences and Arts	B.S.
Aviation Technologies	X		College of Applied Sciences and Arts	B.S.
Biological Sciences	X	X	College of Science	B.A.
	X		College of Education	B.S.
Black American Studies		X	College of Liberal Arts	
Business and Administration	X	X	College of Business and Administration	B.S.
Business Economics	X		College of Business and Administration	B.S.
Chemistry	X	X	College of Science	B.A., B.S.

SUBJECT	MAJOR	MINOR	ACADEMIC UNIT	DEGREE
Child and Family Services ⁴		X	College of Education	
Chinese ¹		X	College of Liberal Arts	
Cinema and Photography	X		College of Mass Communication and Media Arts	B.A.
Civil Engineering	X		College of Engineering	B.S.
Classical Civilization ¹		X	College of Liberal Arts	
Classics ¹	X		College of Liberal Arts	B.A.
Clothing and Textiles ⁶	X	X	College of Education	B.S.
Coaching ³		X	College of Education	
Commercial Graphics — Design ¹	X		College of Applied Sciences and Arts	A.A.S.
Communication Disorders and Sciences	X		College of Education	B.S.
Comparative Literature		X	College of Liberal Arts	
Computer Science	X	X	College of Science	B.S.
Construction Technology ⁹	X		College of Applied Sciences and Arts	A.A.S.
Dental Hygiene ⁹	X		College of Applied Sciences and Arts	B.S., A.A.S.
Dental Technology ⁹	X		College of Applied Sciences and Arts	A.A.S.
Design	X		College of Liberal Arts	B.A.
Early Childhood ⁴	X		College of Education	B.S.
East Asian Civilization ¹		X	College of Liberal Arts	
Economics	X	X	College of Liberal Arts	B.A.
Electrical Engineering	X		College of Engineering	B.S.
Electronics Management	X		College of Applied Sciences and Arts	B.S.
Elementary Education ⁴	X		College of Education	B.S.
Engineering Technology	X		College of Engineering	B.S.
English	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.
Environmental Studies		X	Graduate School	
Equine Studies ⁷		X	College of Agriculture	
Finance	X	X	College of Business and Administration	B.S.
Fire Science Management	X		College of Applied Sciences and Arts	B.S.
Food and Nutrition	X		College of Agriculture	B.S.
Foreign Language and International Trade	X		College of Liberal Arts	B.A.
Forestry	X		College of Agriculture	B.S.
French ¹	X	X	College of Liberal Arts	B.A.
	X		College of Education	B.S.
Geography	X	X	College of Liberal Arts	B.A., B.S.
Geology	X	X	College of Science	B.A., B.S.
German ¹	X	X	College of Liberal Arts	B.A.
	X		College of Education	B.S.
Greek ¹		X	College of Liberal Arts	
Health Care Management	X		College of Applied Sciences and Arts	B.S.
Health Education	X		College of Education	B.S.

SUBJECT	MAJOR	MINOR	ACADEMIC UNIT	DEGREE
History	X	X	College of Liberal Arts	B.A.
	X		College of Education	B.S.
Industrial Technology	X		College of Engineering	B.S.
Interior Design	X		College of Applied Sciences and Arts	B.S.
Japanese ¹		X	College of Liberal Arts	
Journalism	X	X	College of Mass Communication and Media Arts	B.S.
Latin ¹		X	College of Liberal Arts	
Linguistics	X	X	College of Liberal Arts	B.A.
Management	X	X	College of Business and Administration	B.S.
Marketing	X	X	College of Business and Administration	B.S.
Mathematics	X	X	College of Science	B.S.
	X		College of Liberal Arts	B.A.
	X		College of Education	B.S.
Mechanical Engineering	X		College of Engineering	B.S.
Microbiology	X	X	College of Science	B.A.
Mining Engineering	X		College of Engineering	B.S.
Mortuary Science and Funeral Service ⁹	X		College of Applied Sciences and Arts	B.S., A.A.S.
Museum Studies		X	College of Liberal Arts	
Music	X	X	College of Liberal Arts	B.Mus., B.A.
	X		College of Education	B.S.
Office Systems and Specialties ⁹	X	X	College of Applied Sciences and Arts	A.A.S.
Paralegal Studies for Legal Assistants	X	X	College of Liberal Arts	B.S.
Philosophy	X	X	College of Liberal Arts	B.A.
Physical Education	X	X	College of Education	B.S.
Physical Therapist Assistant ⁹	X		College of Applied Sciences and Arts	A.A.S.
Physician Assistant	X		College of Applied Sciences and Arts	B.S.
Physics	X	X	College of Science	B.S.
Physiology	X	X	College of Science	B.A.
Plant and Soil Science	X	X	College of Agriculture	B.S.
Plant Biology	X	X	College of Science	B.A.
Political Science	X	X	College of Liberal Arts	B.A.
Psychology	X	X	College of Liberal Arts	B.A.
Radio-Television	X		College of Mass Communication and Media Arts	B.A.
Radiologic Sciences ⁹	X		College of Applied Sciences and Arts	B.S.
Radiologic Technology			College of Applied Sciences and Arts	A.A.S.
Recreation	X		College of Education	B.S.
Respiratory Therapy Technology ⁹	X		College of Applied Sciences and Arts	A.A.S.

SUBJECT	MAJOR	MINOR	ACADEMIC UNIT	DEGREE
Russian ¹	X	X	College of Liberal Arts	B.A.
Social Studies	X		College of Education	B.S.
Social Work	X		School of Social Work	B.S.
Sociology	X	X	College of Liberal Arts	B.A.
Spanish ¹	X	X	College of Liberal Arts	B.A.
	X		College of Education	B.S.
Special Education	X		College of Education	B.S.
Speech Communication	X		College of Liberal Arts	B.S.
Theater	X	X	College of Liberal Arts	B.A.
Tool and Manufacturing Technology ¹	X		College of Applied Sciences and Arts	A.A.S.
University Studies	X		College of Liberal Arts	B.A., B.S.
Women's Studies		X		
Workforce Education and Development	X	X	College of Education	B.S.
Zoology	X	X	College of Science	B.A., B.S.
	X		College of Education	B.S.

¹Described under Foreign Languages and Literatures
²Described under Consumer Economics and Family Management
³Described under Physical Education
⁴Described under Curriculum and Instruction
⁵Described under Linguistics
⁶Described under Vocational Education Studies
⁷Described under Animal Science
⁸A special major may be completed in any academic unit
⁹Qualified A.A.S. graduates may be eligible to earn a B.S. degree through the Capstone Option. See Chapter 3 for additional information.

Visits to Campus

We welcome prospective students, their families, friends, and interested groups to learn about Southern Illinois University at Carbondale through various on-campus and off-campus events. Activities on campus include campus visits, group visit days, on campus previews, and open houses. SIUC off-campus preview programs are held in several locations around Illinois each spring.

Campus Visits. Campus visits are available by appointment Monday through Friday, 8:00 a.m. to 4:30 p.m. To make best use of the visit, plan to arrive early. Please make your reservations at least ten days in advance. Your scheduled visit can include meeting with one of SIUC's admission counselors who will advise you about academic programs, student services, admission policies and procedures, housing options, financial aid, and general information about the University and community. Guided tours of the campus are available. Appointments with representatives of academic programs can also be arranged with advance notice. Campus visitors arriving without providing advance notice will be accommodated to the best of our abilities considering the circumstances.

Group Visits. Group visit days are, quite simply, campus visits by groups of people. The same arrangements are available and advance reservation is required.

Open Houses. Open house programs are held on campus four or five times each year. Activities include admission counseling; academic program exhibits; displays by student organizations; presentations on financial aid, housing, and other student services; tours of residence halls; campus and academic department tours; and opportunities to enjoy other events or activities.

SIUC Previews. SIUC preview programs are events held on-campus and at off-campus locations from February through May to bring SIUC within easy traveling distance of many Illinois communities. Activities include admission counseling, small-group and individual sessions on financial aid, a dynamic audio-visual presen-

tation entitled SIUC: Today, consultation about University housing, and information displays.

To schedule a campus visit or group visit to campus, or for information about scheduled on-campus open house and preview programs, write New Student Admission Services, Southern Illinois University at Carbondale, Carbondale, Illinois 62901-4710 or call 618-536-4405.

Applying for Admission

Request the Undergraduate Admission Application from New Student Admission Services, Southern Illinois University at Carbondale, Carbondale, Illinois 62901-4710, or call 618-536-4405 (direct), or Email at admrec@siu.edu or view the SIUC Admission and Records home page at <http://www.siu.edu/~oar>. For admission requirements see Chapter 2.

Campus Living

On-Campus Housing for Single Students

The University offers single students a variety of living experiences in the on-campus residence halls. These halls provide not only room and board but also opportunities for participation in academic, recreational and social programs. Two distinct advantages of living on campus are the ready access to all facilities and the absence of a need for special transportation since all campus activities are within easy walking distance. Meals are provided in cafeterias of the common buildings in each housing area. A variety of meal plan options are available to students who do not want the standard nineteen meals a week. Food is presented in a modern all-you-can-eat scatter system. A registered dietitian plans the menus and is available to assist students who have medical or personal dietary concerns or who desire nutritional counseling. Co-ed living is available in all housing areas. All rooms are furnished with single beds, 36 inches by 80 inches, closet space, chests of drawers, desks, study chairs, and draperies. Study lamps, pillows, bed linen, towels, blankets and telephone instruments must be provided by the students. Telephone jacks and cable TV outlets are provided in each room. Housing contracts are for the school year (fall and spring semesters) with summer contracts being issued separately. The residence halls close during University holidays and break periods, with the exception of Allen, Boomer, Wright and Neely Halls in University Park which are open during all breaks at an additional daily cost.

SIUC student housing policy stipulates that all single freshman and sophomores under the age of 21 are required to live either in an on-campus residence hall or an approved privately-owned residence hall (known as an accepted living center), or live at home with parent or legal guardian. The accepted living centers for freshman under the age of 21 provide food service and supervision comparable to that in on-campus housing. Sophomores are also allowed to live in some privately owned sophomore qualified facilities.

Freshmen and sophomores under the age of 21, living with parent or legal guardian, are required to file a *Report of Single Undergraduate Living with Parent/Guardian* form with the off-campus housing office. These students are also allowed to live with an approved brother/sister/grandparent, but certain forms must be filed with off-campus housing. Contact off-campus housing for more information. This policy is enforced in fall and spring semesters and the summer session. Any students who feel that they qualify for an exception to this policy must contact the Off Campus Housing Office, Washington Square D. Students in violation of this policy will have a hold placed on their future registration and will be required to move into approved housing.

There are no restrictions for juniors (56 earned semester hours accepted by SIUC), seniors, students over the age of 21, veterans, married students, or students declared independent by the Financial Aid Office.

Separate applications are required for admission and housing. Housing contracts are offered on a space available basis only. Admission to the University does not guarantee housing on campus.

Rates. The 1997-98 room and board rates for the three on-campus residential areas are \$3,632 (\$1,816 per semester) plus a \$17 campus housing activity fee. Single room contracts are an additional \$1,056 (\$528 per semester). Students entering for fall semester must purchase a two-semester contract.

Brush Towers. Brush Towers consists of two 17-story, air-conditioned halls, Mae Smith and Schneider Halls. The commons unit is Grinnell Hall which houses the food service, post office, and area office. There is a large study area and computer lab located on the lower level of Trueblood Hall in nearby University Park. This facility is available to Brush Towers residents. The facility offers terminals which provide access to the University's mainframe computer as well as a number of personal computers. All are available free of charge.

Thompson Point. Thompson Point consists of eleven air-conditioned halls. Lentz Hall serves as the commons unit for the food service, post office, snack bar, and recreation areas. Included in the Thompson Point residential area are special facilities for disabled students. There is a study area and computer lab located on the lower level of Lentz Hall. This facility offers terminals which provide access to the University's mainframe computer as well as a number of personal computers. All are available free of charge.

University Park. The University Park residential area is air-conditioned and consists of Neely Hall, a 17-story residence hall; and Allen, Boomer, and Wright Halls, four-story residence halls. A limited number of single rooms are available in Neely, Allen, Boomer and Wright Halls and these buildings remain open during all University holidays and break periods. Neely Hall is restricted to students 21 years of age or older. Trueblood Hall is the commons unit housing the cafeteria, snack bar, computer room, and post office. There is a large study area and computer lab located on the lower level of Trueblood Hall. The facility offers terminals which provide access to the University's mainframe computer as well as a number of personal computers. All are available free of charge.

More information regarding on-campus housing or application forms may be obtained by writing the Contracts Office, University Housing, Building D, Washington Square, Carbondale, IL 62901-6716.

Greek Row. The Greek Row area provides housing for sororities and fraternities. Each building houses about forty students and includes a formal lounge, dining area, and kitchen. Assignment of students to this area is by invitation from the fraternal organization. For more information, contact the Office of Student Development, Southern Illinois University at Carbondale, Carbondale, IL 62901-4425.

Housing for Married Students

There are 571 apartments, both furnished and unfurnished, available for married students. The costs range from \$325 to \$377 per month with utilities or \$311 to \$335 per month with tenant paying electricity. For more information or application forms write: Family Housing, Building D, Washington Square, Southern Illinois University at Carbondale, Carbondale, IL 62901-6716.

Privately Owned Facilities

Carbondale offers many types of rental units: rooming houses, apartments, residence halls, and mobile homes. Most privately owned facilities are within walking distance of the campus. For more information about privately owned housing and accepted living centers for freshman and sophomores, please write or call: University Housing Office, Off-Campus Housing Division, Building D, Washington Square, Southern Illinois University at Carbondale, Carbondale, IL 62901-6716, phone 618-453-2301. It is not considered wise to contract for an off-campus living facility without first seeing it.

Parking on Campus

Students wishing to operate and/or park a motor vehicle on campus must apply for a parking decal at the Parking Division located at Washington Square, Building B.

Graduate students and the following categories of undergraduate students may apply for permission to use, operate, park or possess a motor vehicle on campus: (1) Juniors and seniors (with proof of 56 credit hours or more completed); (2) Students 21 years of age; (3) Veterans with two years of military service; (4) Married students; (5) Students residing in the home of a parent or guardian; (6) Students requiring a motor vehicle for reasons of health or physical condition as certified in writing by Disability Support Services; and (7) Students not covered by 1 through 6 whose reasons for requiring a motor vehicle are judged valid by the Office of Transitional Programs and so certified in writing.

To purchase a decal at the Parking Division, an eligible student must present a student identification card, a valid operator's license, vehicle registration card, and proof of liability insurance which must be maintained for the duration of the parking decal. Students residing on campus must also present a housing contract or a meal ticket. If a parking decal is purchased, a fee is charged. This fee is determined by the type of decal an applicant is eligible for and receives. Currently student parking fees range from \$2 to \$30.

To accommodate unregistered vehicles, twenty-four hour parking is available for the first five days of any term and during final exam week of any term only in lots 56, 59 and 100.

Exceptions to Motor Vehicle Regulations

Regulations concerning the use of motor vehicles require that a student has achieved junior status, be 21 years of age, married, a veteran or hold graduate status. Exceptions are made only on a limited basis and only for students whose need for a motor vehicle is justified and can be documented. Contact the Office of Transitional Programs or Parking Division for details.

Financial Aid

The Financial Aid Office assists students in seeking monetary assistance to finance their postsecondary education at Southern Illinois University at Carbondale. Last year Southern Illinois University at Carbondale distributed over \$118 million in financial aid to more than 20,580 students.

A package of financial aid is prepared for those students who qualify. The package may include scholarships, grants, student employment and loans. The financial aid package offered is contingent upon both the availability of program funds and each student's demonstrated financial need, as determined from the student's financial aid application.

Grants and scholarships are gift aid which are not repaid to the donor. Loans must be repaid. Interest and repayment provisions differ depending on the loan program. Student employment is offered to all students who desire to earn money while attending the University.

Financial Aid Programs

The University participates in the federal, state, and institutionally-funded financial aid programs including Federal Pell Grant, State of Illinois Monetary Award Program (MAP), Federal Direct Student Loan Program, Federal Perkins Loan Program, Student-to-Student Grant, Federal Supplemental Educational Opportunity Grant, and the Student Employment Program.

The *Financial Aid Opportunities* brochure summarizes the types of financial aid coordinated through the Financial Aid Office, the application procedures, and the corresponding deadlines. A copy of the brochure is available upon request.

Grants. The major federal grant programs include the Federal Pell Grant and the Federal Supplemental Educational Opportunity Grant. The largest state grant is the State of Illinois Monetary Award Program (MAP). These grants are based on financial need as determined from the student's financial aid application.

Scholarships. Southern Illinois University at Carbondale offers scholarships based on scholastic achievement to high school and Illinois community college transfer students (associate degree graduates only). These scholarships vary in eligibility requirements and dollar values. For more detailed information about the scholarships, students should contact New Student Admission Services.

Recipients of academic scholarships are selected annually by academic units of the University. Also, a limited number of private scholarships are available from each area. More information is available from the appropriate scholarship coordinator in each academic unit.

Students interested in seeking a private grant or scholarship should check as many sources as possible including high schools, local clubs and civic organizations, businesses, church groups, alumni organizations, and commercial lending institutions. Higher-Ednet, a service of the Illinois Student Assistance Commission (ISAC), can locate financial aid sources for a \$10 application fee. Contact ISAC at (800) 899-4722 for more information. In addition, public libraries are an excellent source for information on state and private scholarship money.

Loans. The largest programs include the Federal Direct Stafford/Ford Loan, the Federal Direct Unsubsidized Stafford/Ford Loan, the Federal Direct Parent Loan for Undergraduate Students (PLUS) and the Federal Perkins Loan. To apply for any student loan, students should complete and mail a 1997-98 financial aid application. The Federal Direct Stafford/Ford Loan and the Federal Perkins Loan are based on financial need. The Federal Direct Unsubsidized Stafford/Ford Loan is not based on need, but a financial aid application must be completed. The Federal Direct PLUS Loan is available to parents borrowing for the students' cost of attendance.

Employment. More than 8900 students were employed by the University last year. Most student employees work at the prevailing minimum wage for 15 to 20 hours a week. Once students arrive on campus, they should review the job listing board in the Financial Aid Office to determine which jobs interest them. The Financial Aid Office also lists job openings via the Internet on the FAO Home Page of the World Wide Web. A Student Employment Referral will be given to students to interview with prospective on-campus employers.

In addition, information regarding part-time off-campus jobs is available. Many SIUC students choose to work off-campus in Carbondale and the surrounding area.

Application for Financial Aid for the 1997-98 Academic Year

To apply for financial aid, students, with their parents, should complete and mail a 1997-98 Free Application for Federal Student Aid (FAFSA) or a 1997-98 Renewal Application. Completion of a FAFSA or a Renewal Application will allow the student to be considered for the Federal Pell Grant, State of Illinois Monetary Award Program (Illinois residents only), the SIUC Campus-Based Aid Programs, the Student Employment Program, and the Student Loan Programs.

When completing the FAFSA or Renewal Application, Southern Illinois University at Carbondale (Title IV Code 001758) should be entered as one of the school choices so SFUC will electronically receive the application information from the U.S. Department of Education.

Students should complete and mail their FAFSA or Renewal Application as early as possible since campus-based aid funding is limited and distributed to eligible students on a first-come, first-served basis. Priority consideration for campus-based aid will be given to those students who complete and mail their financial aid application before April 1, 1997. The FAFSA's are available in December preceding each academic year, and may be obtained from local high schools, community colleges, or from the Financial Aid Office. Renewal Applications are mailed in December preceding each academic year to students who applied for financial aid the previous year.

Senior Citizen Courses Act

Senior citizen as defined under the Act means a person 65 years of age or older whose annual household income is less than \$14,000. The statute requires the University to waive the tuition for such citizens unless classroom space is not available or if tuition paying students enrolled do not constitute the minimum number required for the course. Even where tuition must be waived, other fees may be charged.

Academic Progress Standards for Financial Assistance

The University requires that a student be making satisfactory progress toward a degree if that student wishes to receive financial aid funds. A student is making satisfactory progress toward a degree if successfully meeting each of four basic academic standards. First, students are expected to have passed at least a prescribed number of cumulative credit hours at Southern Illinois University at Carbondale for the total number of terms enrolled at Southern Illinois University at Carbondale. Second, students must complete their degree within a maximum number of Southern Illinois University at Carbondale terms. Third, students must complete their degree before accumulating a maximum number of credit hours. Fourth, students must remain in compliance with the University's policy concerning scholastic standing and grade point average. A copy of the policy on satisfactory progress is available upon request from the Financial Aid Office.

Students desiring additional information should contact the Financial Aid Office, Mailcode 4702, Woody Hall, B Wing, Third Floor, Carbondale, Illinois 62901-4702, telephone 618-453-4334. Students may FAX financial aid documents to 618-453-7305.

Students can contact the Financial Aid Office electronically at the FAO E-mail address: fao@siu.edu. Students can also access financial aid information through the FAO Home Page on the World Wide Web (<http://www.siu.edu/~fao/>) or obtain voice/response information about their financial aid by calling Unilink at (618) 453-SIUC. The student's four digit Pin number is their birthday and birth year (DDYY). Specific financial aid information can also be obtained via the Internet on the FAO Home Page.

NOTE: At the time of printing this publication, final rules and regulations for the 1997-98 academic school year were pending. Therefore, students should contact the Financial Aid Office for the most recent information.

2 / Admissions, Tuition and Academic Information



Admission Policies, Requirements, Procedures

Now that you have decided you want to attend SIUC you need to know how to apply for admission. Policies and procedures for admission are presented in the admissions section of this chapter. Definitions of each category of admissions are included along with procedures that you will need to follow to complete your undergraduate admission application.

APPLYING FOR ADMISSION

You need to request the admission application from New Student Admissions Services, Southern Illinois University at Carbondale, Carbondale, Illinois, 62901-4710 or call 618-536-4405. You may also want to schedule a campus visit at the same time.

Applications for admission to the University are accepted anytime during the calendar year but should be submitted at least thirty days prior to the beginning of classes.

The University closes admission to some programs whenever the availability of faculty or facilities necessitates such closures. The University also stops accepting admission applications from freshman whenever the availability of the University resources dictates this action.

If you are a high school student, you may initiate the admission process following completion of your sixth semester in high school. If you are a transfer student who has completed a minimum of one year of work, you can be considered for admission one year in advance of your date of matriculation if you plan to transfer without interruption. Transfer students who intend to transfer to Southern Illinois University at Carbondale after completing one term or one year of study may be admitted prior to completing their transfer work if they qualified for admission as beginning freshmen.

DOCUMENTS REQUIRED FOR ADMISSION

Items required by the University before an admission decision can be made are:

1. **The undergraduate admission application.**
2. **Transcripts of previous educational experience.** High school students should submit an official copy of their high school transcript or General Educational Development Test scores. Transfer students must submit to the Office of Admissions and Records an official transcript from each institution previously attended. In addition, transfer students who have earned fewer than 26 semester hours (39 quarter hours) of transfer work must provide the University an official copy of their high school transcript or General Educational Development Test scores. Transfer students who have attended an institution whose credit is not acceptable for admission must also submit an official copy of their high school transcript and ACT or SAT scores.
3. **University entrance examination scores.** All students who are applying for admission directly from high school and all transfer students who have completed fewer than 26 semester hours (39 quarter hours) must have their official ACT scores sent to the University from the American College Testing Program, Box 451, Iowa City, Iowa 52240, or their official SAT scores.

NOTE: Also see Immunization Policy in Chapter 7.

ADMISSION OF FRESHMEN

To be eligible for admission, you must be a graduate of a recognized high school. Graduates of nonrecognized high schools may be admitted to the University by an entrance examination. If you have not completed high school you may be considered for admission by completing the GED test.

Students entering the University as freshmen are admitted to the academic unit within the University that offer the academic programs they indicate they plan to pursue if the student qualifies for admission into that program. Students who are undecided as to the course of study they want to follow are admitted to Pre-Major Advisement or to selected other units with an undecided major.

Students who are admitted as beginning freshmen but enroll at another college or university prior to their enrollment at Southern Illinois University at Carbondale may face a change in their admission status. It will be necessary for the student to report work in progress and to forward the official transcripts after completion of the coursework.

Beginning freshmen are considered for admission on the basis of a combination of class rank and test scores (ACT or SAT). In addition, students entering the University are required to have completed selected high school courses to qualify for unconditional admission. All students granted admission while in high school are subject to the completion of high school course patterns and graduation from high school. (See High School Course Pattern Requirements below.)

High School Course Pattern Requirements. This policy applies to beginning freshman and transfer students who have completed fewer than twenty-six semester hours of transferable credit.

HIGH SCHOOL COURSE REQUIREMENTS FOR ADMISSION

Course	Number of Units Required	High School Courses That Complete the Area
English	4	Emphasizing written and oral communication and literature
Social Studies	3	Emphasizing history and government.
Mathematics	3 ¹	Algebra through advanced algebra, geometry, trigonometry, or fundamentals of computer programming. Computer programming courses taught in the secondary school business education program or that do not have mathematics courses as a prerequisite are accepted as vocational education courses.
Science	3	Laboratory sciences.
Electives	2	Foreign language, art, music, or vocational education. If a foreign language is taken, it must include two semesters of the same language.
Total		15 - 15.5

¹3.5 units of mathematics are required for admission to engineering programs.

High school units in excess of the required number of units in mathematics, social studies or science may be redistributed among the other categories by applying no more than one unit to any of the following categories: mathematics, social studies, science, or elective. Elective subjects cannot be substituted for required courses in English, mathematics, science or social sciences. Students with two or more high school course unit deficiencies in mathematics or English will be denied admission to the University.

Students who qualify for admission based on class rank, test scores and transfer grade point average, but have course pattern deficiencies will be provisionally admitted to the University.

Selected applicants are exempt from the high school subject requirements. These include students whose class rank and ACT test scores are at the seventy-fifth percentile (a composite score of 23 on the ACT), participants in the early admission/concurrent enrollment program until the time of their high school graduation,

and transfer students who have earned twenty-six semester hours of transferable credit.

Beginning freshmen may satisfy a course pattern deficiency by achieving a sub-score on the ACT which is equivalent to the sixtieth percentile on the College Bound Norms. The Enhanced ACT subscores required to satisfy a course deficiency on the 1993-94 ACT tests are: English 21; Mathematics 21; Reading 22; and Science Reasoning 22. Deficiencies may also be fulfilled by CLEP scores or AP scores that qualify the student for credit. The tests must be in the area that is deficient.

REQUIREMENTS FOR ADMISSION OF FRESHMAN

Freshman admission to the University can be granted in one of three ways:

1. an entrance examination score at the fiftieth percentile or higher, regardless of class rank. This would be a composite score of 20 on the Enhanced ACT, or an SAT I combined score of 930.

2. an ACT score at the thirty-third percentile or higher (a composite score of 18 on the ACT or an SAT I combined score of 850) and class rank in the upper half of your graduating class, or

3. the non-high school graduate who has satisfactorily completed the General Education Development Test and achieved an entrance examination score above the thirty-third percentile. (ACT of 18 or SAT I of 850).

In addition, students must meet the course pattern requirements described above for unconditional admission. Those students who meet class rank and/or test score requirements, but have course pattern deficiencies will be granted provisional admission.

Potential freshman who do not meet the admission requirements above are urged to submit applications for admission to the University. If you demonstrate potential for academic success, you may be considered for admission through the Selective Admissions Program. Students admitted through the Selective Admissions Program are admitted in good standing and are required to participate in academic assistance activities.

ADMISSION OF TRANSFER STUDENTS

If you have attended another college, university, or postsecondary institution you are required to submit an official transcript from each institution attended. All transcripts become the official property of Southern Illinois University at Carbondale and will not be returned nor issued to another institution.

Institutions accepted for transfer work:

1. An institution which is accredited or in candidacy status by one of the regional accrediting associations, or

2. An institution which is not accredited by or in candidacy status with one of the regional accrediting associations but the credit from the institution is accepted by the reporting institution in that state, or

3. An institution which is not accredited by or in candidacy status with one of the regional accrediting associations but is one recognized by CCA/ACTTS, AMA, ABET, or similar accrediting bodies recognized by the National Commission on Accrediting or the United States Office of Education. The student must have completed a two-year non-baccalaureate degree or equivalent terminal program with a C average before admission to SIUC will be granted. Students admitted from such institutions should not expect to receive credit at Southern Illinois University at Carbondale except in programs which accept occupational credit.

REQUIREMENTS FOR ADMISSION OF TRANSFER STUDENTS

1. Graduation from a recognized high school or satisfactory completion of the General Educational Development Test.

2. An overall C average (2.0 on a 4.0 scale) from all post-secondary institutions. All grades earned in transferable courses and in courses with a quality point value are used to calculate the grade point average used for admission purposes. This includes all grades earned in repeated courses prior to Summer 1996. After Summer 1996 any course taken and repeated Summer 1996 and after will have only the last repeated course's grade calculated. Both courses must be from the same institution. Transfer work is calculated according to Southern Illinois University at Carbondale regulations rather than those of institutions students have previously attended.

3. Eligible to continue your enrollment at the last post-secondary institution attended. Students who have been placed on scholastic probation or academic suspension from another college or university will be considered for admission by the Office of Admissions and Records only if there is tangible evidence that additional education can be completed successfully. Tangible evidence might include: (1) an interruption of schooling for one or more years, (2) military experience, (3) work experience, and (4) previous academic performance.

If you have been suspended for any reason other than academic failure, you must be cleared by the Office of Transitional Programs before admission will be granted by the director of admissions.

If you are seeking admission with fewer than twenty-six semester hours, you will be required to meet the admission requirements of a beginning freshman as well as a transfer student.

Transfer students who have completed a minimum of one year of work can be considered for admission one year in advance of their matriculation if they plan to transfer without interruption. If you are enrolled in a collegiate program for the first time and wish to transfer upon completion of your first term or first year, you may do so if you meet the University's admission requirements for beginning freshmen. Admission granted to a student on partial or incomplete records is granted with the condition that the student will have an overall C average and be eligible to continue at the last school attended at the time of matriculation. Students whose final transcripts indicate a grade point average or scholastic standing less than that required for unconditional admission will have their admission and registration withdrawn.

Transfer students will be admitted directly to the college in which their major fields of study are offered if they qualify for that program. Students who are undecided about their major fields of study will be admitted to Pre-Major Advisement or to selected other units with an undecided major.

TRANSFER CREDIT

Transfer credit for students admitted to the University is evaluated for acceptance toward University and University Core Curriculum requirements by the Office of Admissions and Records after the admission decision has been made. Credit from a regionally accredited institution, and those in candidacy status, or from an institution that has its credit accepted by the reporting institution in the state is evaluated at the time of admission. Courses which are remedial or developmental will not be accepted for transfer. The Office of Admissions and Records will determine the acceptance of credit and its applicability toward University Core Curriculum requirements. All credit which is accepted for transfer and which is not applied to University Core Curriculum requirements or to a specific degree program will be considered elective credit. Transfer courses to be considered toward specific program requirements will be articulated by the department directing the program.

All grades earned in transferable courses and in courses with a quality point value are used to calculate the grade point average used for admission purposes. This in-

cludes all grades earned in repeated courses prior to Summer 1996. After Summer 1996 any course taken and repeated Summer 1996 and after will have only the last repeated course's grade calculated. Both courses must be from the same institution. Transfer work is calculated according to Southern Illinois University at Carbondale regulations.

Completion of an associate degree in a baccalaureate-oriented program in an accredited Illinois two-year institution provides that the student will: (a) be accepted with junior standing and (b) be considered to have completed the University Core Curriculum requirements required for general graduation purposes. Associate degrees earned at other than Illinois two-year institutions will be reviewed by the Office of Admissions and Records. If the degree is determined to be baccalaureate-oriented and to have comparable content and credit hour criteria, the same benefits will be extended to those graduates. Transfer students may also satisfy the requirements of the University Core Curriculum by successful completion of the Illinois Transferable General Education Curriculum. Credit from an accredited two-year institution is limited only by the provision that students must earn at least 60 semester hours of work at Southern Illinois University at Carbondale or at any other approved four-year institution and must complete the residence requirements for a degree from the University.

Further information on the application of transfer work toward satisfying University Core Curriculum requirements may be found in Chapter 3.

ADMISSION OF SPECIAL CATEGORIES OF STUDENTS

Several types of students are given special consideration when seeking admission to the University. These are described below:

Admission of International Students

In general, international students must meet the same academic standards for admission as those required of native students. As there is considerable variation between educational systems throughout the world, precise comparative standards are not always available. Therefore, international students are considered for admission on the basis of their former academic work, English proficiency, and evidence of adequate financial resources.

In addition to submitting copies of secondary school records and, when applicable, college transcripts, international students must also submit scores from the TOEFL examination (Test of English as a Foreign Language). TOEFL scores are required of all international students who (1) have completed their secondary education in a country where English is not the native language, (2) have completed fewer than two years of study in a United States high school, (3) have completed fewer than two years (56 semester hours) of collegiate training in an accredited United States college or university. Students who have completed their secondary education in a country where English is the native language are required to submit scores from either the American College Test or the Scholastic Aptitude Test.

Students who have acquired immigrant status are also required to demonstrate English proficiency. English proficiency can be demonstrated by successful completion of the TOEFL examination. Immigrants who have completed at least two years of study in a United States high school, have earned 56 semester hours in a United States college or university, or have completed their secondary education in a country in which English is the native language are not required to submit TOEFL scores or write a special English examination. They may, however, be required to submit university entrance examination scores if they are seeking admission as beginning freshmen or transfer students with fewer than twenty-six semester hours.

International students whose secondary school and college records are acceptable for admission purposes must achieve acceptable TOEFL scores for unconditional admission. Students with a TOEFL score of 520 or higher will be granted unconditional admission. Applicants whose TOEFL score is less than 520 will be admitted contingent upon completion of an English test administered by the Center for English as a Second Language. Students who fail to submit TOEFL scores, or who do not submit acceptable TOEFL scores, will be required to attend courses at the Center for English as a Second Language.

An administrative service fee of \$100 per student per semester including summer session will be charged to sponsoring agencies which enroll international students.

International students interested in making application to Southern Illinois University at Carbondale should address their inquiries to the Office of Admissions and Records, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

Southern Illinois University at Carbondale is authorized under Federal law to enroll non-immigrant alien students.

Admission of Former Students

If you have attended another institution since your previous enrollment at Southern Illinois University at Carbondale you must submit an official transcript from that institution before you can be considered for readmission. In addition, a student who has a financial obligation to the University or an immunization hold must clear these holds before being considered for readmission. Students who were suspended for scholastic or disciplinary reasons during their previous enrollment at the University must be approved for readmission by the appropriate academic dean or the Office of Transitional Programs before they can be readmitted to the University. Students with less than a C average must be approved for readmission by an academic dean if they are entering an academic unit other than the one in which they were previously enrolled.

It is advisable for former students to initiate the readmission process with the Office of Admissions and Records early. This permits students to complete any special requirements that may be imposed upon them. (See Scholastic Probation, Second Chance and Scholastic Suspension elsewhere in this catalog for further information.)

SECOND CHANCE PROGRAM – A SPECIAL ADMISSION PROGRAM FOR FORMER STUDENTS

The Second Chance Program is designed to allow some former Southern Illinois University at Carbondale students who had a poor scholastic performance in their initial enrollment a second opportunity to demonstrate their academic capabilities. The program permits students in selected majors to establish a new grade point average calculated from their first semester of readmission. Not all University departments are participating in the Second Chance Program. Second Chance students will lose their Second Chance standing if they transfer to a program that does not offer Second Chance.

Program Eligibility Requirements. Former Southern Illinois University at Carbondale students who meet one of the following qualifications may apply for entrance to the Second Chance Program.

1. Adult reentering students who are at least twenty-four years of age and who previously earned fewer than 60 semester hours at Southern Illinois University at Carbondale with less than a 2.0 grade point average. In addition, applicants who have attended any post secondary institution, college, or university including Southern Illinois University at Carbondale within the immediate three years prior to reentering Southern Illinois University at Carbondale in the Second Chance Program must have earned a 2.0 cumulative grade point average for collegiate work taken during that period.

2. Veterans who have completed at least one year of active military service after having previously earned fewer than 60 semester hours at Southern Illinois University at Carbondale with less than a 2.0 grade point average. Southern Illinois University at Carbondale must be the first institution attended since discharge or separation.

3. Community college graduates who have previously earned less than 60 semester hours from SIUC with a grade point average below 2.0 prior to completing an associate degree from a regionally accredited institution. Southern Illinois University at Carbondale must be the first institution attended since earning the associate degree.

Program Academic Regulations.

1. A former Southern Illinois University at Carbondale student must meet the University readmission requirements at the time of readmission before applying for the Second Chance Program.

2. A student can be admitted to Second Chance only once. Students who are suspended for scholastic reasons while enrolled in Second Chance cannot be readmitted to this program.

3. Students readmitted to Southern Illinois University at Carbondale through the Second Chance Program may enter only selected majors. The following programs do not participate in the Second Chance Program and transferring to these programs will result in the loss of your Second Chance status.

Accounting	Finance
Advanced Technical Studies	Fire Science Management
Automotive Technology	Health Care Management
Aviation Flight	Interior Design
Aviation Management	Management
Aviation Technology	Marketing
Business and Administration	Mechanical Engineering
Business Economics	Mining Engineering
Business—Undecided	Physical Education (athletic training and teacher education specializations)
Cinema and Photography	Physician Assistant
Civil Engineering	Radio-Television
Communication Disorders and Sciences	Social Work
Dental Hygiene	Speech Communication
Electrical Engineering	University Studies
Electronics Management	

In addition to the above programs, Teacher Education Programs in the College of Education as well as those majors in other colleges in which a student intends to pursue a Teacher Education Program are not available to students in the Second Chance Program.

3. Students who are readmitted through the Second Chance Program will have Second Chance indicated on their transcripts with an appropriate explanation of the program included in the transcript explanation sheet which is attached to all transcripts.

4. Students who are readmitted through the Second Chance Program must meet the curricular requirements stated in the undergraduate catalog in effect for either the term of their reentry or for subsequent terms after their reentry to Southern Illinois University at Carbondale under the Second Chance Program.

5. A new Southern Illinois University at Carbondale grade point average will be calculated from the first term of readmission through the Second Chance Program.

6. The new Southern Illinois University at Carbondale grade point average will apply only to scholastic retention, financial aid, and the grade point average required for graduation from the University. All grades earned at Southern Illinois University

at Carbondale including all work taken prior to admittance to the Second Chance Program will be used in the calculation of student classification, major program grade point average, collegiate unit requirements, and total semester hours completed.

7. Previously earned work at Southern Illinois University at Carbondale will remain on the student's official record and passing work may be used to satisfy degree requirements.

8. Students who are readmitted through the Second Chance Program may not use the University's forgiveness policy to calculate another grade point average for graduation purposes.

9. To be eligible for graduation, a student readmitted through the Second Chance Program must earn at least 30 additional semester hours at Southern Illinois University at Carbondale.

10. A Second Chance student who changes majors to a program which does not participate in Second Chance will have their previous SIUC grade point average calculated in all future grade point averages.

Admission of Veterans

Veterans seeking admission to the University are admitted in good standing regardless of their previous academic record provided that any additional post-secondary education attempted after active duty has been completed with a grade average of C quality or better. Veterans entering the University are required to have completed the high school course pattern requirements as required for other students.

Prior academic work of an admitted reentering veteran is counted together with all subsequent work after admission. Veterans are required to submit all required admission credentials before their applications can be processed. This includes high school transcripts or GED scores, ACT or SAT results if under the age of 21, and official transcripts from each college or university previously attended. In order to be admitted under the veteran's policy, one must have served on active duty and present a copy of discharge or separation papers to the Office of Admissions and Records.

Military personnel on active duty in any branch of the United States military are expected to meet the same admission requirements as a veteran. Students in military programs are admitted directly into the degree program in which they are enrolling. Military program students whose credentials are not submitted by the end of the second semester will not be allowed to enroll further until all credentials are received.

Admission of Students as Unclassified Students

Adults who have graduated from high school or who have passed the GED tests can be considered for admission as unclassified students. Students in this special category are non-degree students and are not required to submit all records normally required for admission to degree programs.

Non-military personnel whose admission credentials are incomplete are admitted to off-campus courses or degree programs as unclassified students. Unclassified students taking courses in off-campus degree programs have one semester to submit all of their admission records. Future registrations will not be allowed for students who are participating in off-campus degree programs and have incomplete admission records. Students who are taking off-campus courses in which a degree program is not offered may take twenty-six semester hours before they are required to submit all of their academic records. Those students whose records remain incomplete upon completion of twenty-six semester hours will not be allowed to register for any additional courses.

Records submitted by students participating in off-campus courses and degree programs will be reviewed in accordance with current University admission policies. Students who have completed fewer than twelve semester hours at the University and did not meet the current admission requirements will have their academic status changed to scholastic probation.

Students admitted under the Senior Citizen Courses Act may be considered for admission as unclassified non degree students without submitting records required for admission to a degree program. Those seeking admission to a degree program must meet all University admission policies.

Admission of High School Students

Exceptionally capable high school students who have completed their freshman year in high school, are recommended in writing by their high school principal, and are approved for admission by the University director of New Student Admissions will be permitted to enroll in University courses subject to departmental approval. Students approved for admission to this program will be permitted to enroll in University courses during the summer and concurrently with their high school work during the regular school year. Sophomores and juniors may register for one course and seniors may enroll for one and possibly two courses depending on their high school schedules.

The concurrent enrollment program is an acceleration and enrichment experience for academically capable students. To participate in the program, students must have achieved an overall *B* average (3.0 on a 4.0 scale) in high school.

The University courses to be taken in this program should be in subject areas in which a high school does not offer courses or in subject areas in which the student has completed all of the courses the high school can offer. When a high school principal recommends a specific course or courses to be taken, an academic adviser will assist the student in arranging such a schedule.

It is assumed that high school principals who recommend students for this program will consider a student's aptitude for completing college work and a student's ability to adjust socially to the campus community.

High school course subject requirements will be imposed on concurrently enrolled students at the time of high school graduation.

Admission of Transient Students

Students who are attending other collegiate institutions and want to enroll for one semester must submit an undergraduate admission application. They must submit also documentation indicating they have an overall *C* average and are eligible to continue their enrollment at the last institution attended. This can be a student's most recent transcript or grade report. Transient students who request to continue their enrollment for subsequent semesters must submit all documents required for admission and meet the University's current admission policies.

Advisement, Registration, Withdrawal

Through a carefully designed system of orientation, academic advisement and registration, the University attempts to assure you an efficient and effective introduction to the University prior to the time you start class attendance. A more extensive program is provided for those students entering during the fall semester while abbreviated activities are in operation for the other semesters.

The University conducts an advance registration system. All continuing and new students have the opportunity and are expected to complete advisement and registration for a semester before its actual start.

Starting in February and extending through July, the University notifies new students admitted for the fall semester when they are to come to the campus for advisement and registration. Through this process only the number of students that can be efficiently handled are involved each day. Students who cannot come to the campus during the summer or who delay applying for admission beyond the advance registration period may register at the start of the fall semester but are required to come to campus a few days before those who have registered during the summer period.

At the start of the fall semester new students participate in orientation activities during which time they receive introduction to university life.

Similar procedures are followed at the start of the other semesters. Admitted students are kept informed of orientation, advisement, registration procedures, and the times when they occur by the Office of Admissions and Records in cooperation with Student Affairs.

Academic Advisement

Academic advisement is administered by the academic units. Each unit employs a selected group of trained advisers. They operate under the supervision of a chief adviser who is responsible to the dean of the academic unit. Students who have not yet declared a major are advised in the Pre-Major Advisement Center.

The University accepts the importance of the academic advisement function. Insistence on receipt of transcripts and ACT scores prior to admission serves not only to determine admission but later provides suitable educational information to the advisers upon which decisions can be made relative to the proper courses to advise the student to take. On the basis of this information the advisers can make intelligent decisions, relative to students who should receive advanced standing in courses or who should be urged to take proficiency examinations in courses about which they appear to be already well informed.

The advising of individual students as to their progress is a service provided to you. It does not relieve you, the student, of the responsibility to assure that you are meeting the requirements you need for graduation. You should check with your adviser whenever you have a question as to how you are proceeding.

Changing Majors

If you wish to change your major you must receive approval from the new department and college. A minimum of a C average is required to transfer, some colleges and departments require higher grade point averages. To ascertain the grade point average required for the department you wish to enter, check Chapter 4. Students with less than a C (2.0) grade point average who desire to change from one department or college to another will be admitted to the new academic unit only if approved by the dean of that unit. To initiate the change, go to the academic unit where you are seeking admission.

Registration for Courses

Registration for any session of the University is contingent upon being eligible for registration. Thus advance registrations, including the payment of tuition and fees, are considered to be invalid if you are later declared to be ineligible to register due to scholastic reasons. You may also be considered ineligible to register because of financial or disciplinary reasons.

Detailed information about the dates and procedures for advisement and registration appears in each semester's Schedule of Classes, which is available from your advisement center.

You should be familiar with the following general points about registration.

1. Registration for a semester is conducted under a registration calendar consisting of three distinct periods. Advance registration occurs during the last eight weeks of the preceding term, final registration immediately preceding the start of classes and late registration during the first week of classes.
2. Currently enrolled students are expected to register during the advance registration period. New freshmen, transfer, and re-entry students are provided an opportunity to advance register on specific new student registration days during the advance registration periods.
3. Students who are unable to advance register may register prior to the beginning of classes during the final registration period.
4. Students register at the advisement center of their colleges, schools or departments.
5. Mere attendance does not constitute registration in a class, nor will attendance in a class for which a student is not registered be a basis for asking that a program change be approved permitting registration in that class. Students should complete the registration process before classes begin.
6. Enrollment changes to classes can only be made through the processing of an official registration form. After the second week of the semester, this form must be processed by the Office of Admissions and Records.
8. Tuition and fees are payable in advance or by installments and no student shall be enrolled in any educational unit until at least the first installment of tuition and fees has been paid or officially deferred.
9. Students may not drop a course merely by stopping attendance. (See Withdrawal below.)

Attendance

The faculty of Southern Illinois University at Carbondale affirm the importance of prompt and regular attendance on the part of all undergraduate students. Quality instruction clearly depends upon active student participation in the classroom or its equivalent learning environment. In the transition from high school to the university and from the university to the workplace, personal success is directly related to good attendance.

As a caring public institution, SIUC has the obligation to encourage its primary constituents, the students, to meet their responsibilities first of all to themselves, but also to their families, their classmates, their instructors and the taxpayers and donors who underwrite higher education in the state of Illinois.

For these reasons the SIUC faculty remind undergraduates and their instructor that the first day of class is just as valuable as the last day of class; that work and other extracurricular commitments do not necessarily justify an absence; that holidays begin and end precisely as stated in the University calendar; that instructors should be notified three days prior to religious observances; that major examinations, term papers, and/or assigned projects for one class do not exempt students from their need to attend another; and finally, that some financial assistance at the university is actually contingent upon attendance.

These guidelines express the faculty's collective concern for undergraduates and for one important feature of their education here at SIUC.

Student Identification Numbers

The university student identification number may be the individual student's Social Security number. Students who do not have a Social Security number will be issued a system generated number. Students not wanting their Social Security number used as their university identification number may also request a system generated number.

Withdrawal

If you officially register for a session you may not withdraw merely by the stopping of attendance. You need to process an official withdrawal form. Outlined below are the procedures to be followed when dropping courses and when dropping from the University (which would be withdrawal from all courses for which registered).

DEADLINE DATES

If Classes Meet for	Deadline for Withdrawal to Receive Full Refund	Deadline to Withdraw
13-16 weeks	2nd week	8th week
9-12 weeks	2nd week	6th week
8 weeks	2nd week	4th week
7 weeks	1st week	4th week
4-6 weeks	1st week	3rd week
2-3 weeks	1st day	1st week
Less than 2 weeks	1st day	2nd day
Off-Campus and Individualized Learning Courses	2nd week	8th week

Course Drops. Students officially drop courses through the program change process. This process is done with the academic adviser. Unless a student has processed an authorized drop from a course by the deadline in the schedule above, the student will not be allowed to drop the course. It is the student’s responsibility to ensure that the drop process is officially completed. It is probable that a student who does not drop by the deadlines, but stops attending during the second half of the semester, will receive a grade of F. Students who drop courses after the full refund deadline but remain enrolled in the University will not receive any refund.

Withdrawal From the University. Students registered for academic work must obtain a withdrawal if they contemplate leaving the University. If the student has not made any tuition and fees payment, the registration may be canceled. If the student has paid or made partial payment for tuition and fees, a withdrawal must be processed. If a housing contract has been purchased, the student must contact University Housing to cancel the contract.

Withdrawal from the University is a serious decision which, in many cases, affects financial assistance status, housing contracts, and academic records. A student may, with authorization from the Office of Transitional Programs and the academic dean, obtain a withdrawal. There are, however, restrictions on a withdrawal. A withdrawal will not be issued beyond the eighth week of the semester unless the reasons for the withdrawal are beyond the student’s control and verified in writing. Warning: if a student obtains a withdrawal after week two and is receiving financial assistance, the student may be in violation of the Satisfactory Progress for Financial Assistance policy since no academic credit will be earned for the semester. The table above provides the deadline dates for withdrawal.

Students receiving a withdrawal within the first two weeks will, under normal circumstances, receive a refund of all tuition and fees paid by the student or family. All financial assistance funds will be returned to their original sources if the student withdraws during the first two weeks.

Students who withdraw after the full refund deadline will receive an account credit equal to a pro-rata refund of tuition and fees through sixty percent of the duration of the enrollment period. An administrative fee will be assessed to all students who withdraw from the University and receive a pro-rata refund. The amount of the fee will be lesser of five percent of all assessed charges, or \$100. See the following Pro-Rata Refund Schedule for Withdrawals from the University.

PRO-RATA REFUND SCHEDULE FOR WITHDRAWALS FROM THE UNIVERSITY

Enrollment Period	LENGTH OF COURSES IN WEEKS											
	16	15	14	13	12	11	10	9	8	7	6	5
Week 1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Week 2	100%	100%	100%	100%	100%	100%	100%	100%	100%	70%	70%	60%
Week 3	80%	80%	80%	80%	70%	70%	70%	70%	60%	60%	50%	40%
Week 4	70%	70%	70%	70%	70%	60%	60%	60%	50%	40%	40%	0%
Week 5	60%	60%	60%	60%	60%	50%	50%	40%	40%	0%	0%	0%
Week 6	60%	60%	50%	50%	50%	40%	40%	0%	0%	0%	0%	
Week 7	50%	50%	50%	40%	40%	40%	0%	0%	0%			
Week 8	50%	40%	40%	40%	0%	0%	0%					
Week 9	40%	40%	0%	0%	0%	0%						
Week 10	40%	0%	0%	0%								
Week 11+	0%	0%										

Enrollment Period		LENGTH OF COURSES IN WEEKS			
		4	3	2	1
Day 1	Week 1	100%	100%	100%	100%
Day 2		100%	90%	80%	60%
Day 3		100%	80%	70%	40%
Day 4		100%	70%	60%	0%
Day 5		100%	60%	50%	0%
Day 6	Week 2	70%	60%	40%	
Day 7		60%	50%	0%	
Day 8		60%	40%	0%	
Day 9		50%	40%	0%	
Day 10		50%	0%		
Day 11	Week 3	40%	0%		
Day 12		40%	0%		
Day 13		0%			
Day 14		0%			
Day 15		0%			
After Day 15		0%			

Students who officially withdraw from school by the specific withdrawal deadline will receive a credit to their University account. Immediate cash refunds are not given for withdrawal from the University, reduction in credit-hour loads, or overpayment of account. Refunds are processed by the Bursar at least once a week (twice a week during the week before the start of a semester and the first week of a semester) from an automated listing reflecting those accounts with a credit balance. No refunding of tuition and fees is made for a withdrawal occurring after the deadlines, except as described in the section titled Tuition and Fee Refund Policy and Procedures below.

Special consideration is extended to individuals who leave school for extended military service (6 months or longer). If students withdraw during the sixth through tenth weeks of school, they will receive one-half credit without letter grades for the courses in which they were receiving a passing grade at the time of withdrawal. When the withdrawal occurs after the tenth week, students will receive both grades and credit hours for the courses in which they are passing. In all instances, a copy of the military orders or a letter from the commanding officer is required for verification of impending military service. To be eligible for these benefits students must remain in school to within ten days of their military reporting date.

Withdrawal from the University does not relieve the student from housing contract obligations. Each student must contact University Housing and resolve the contract issue with that office.

All students seeking a withdrawal must contact the Office of Transitional Programs in person or by mail. The withdrawal, if granted, will be dated at the time of the initial contact with that office, provided the student completes the requirements for the withdrawal. Incomplete applications for withdrawal will be denied. Any student who fails to comply with the withdrawal procedures will receive grades for the semester and must satisfy the financial obligations for the semester.

Tuition and Fees and Other Financial Information

It is difficult to indicate the specific cost of attending the University because of the differences in personal spending habits. However, the following information may be helpful.

Tuition and Fees

Tuition and fees charged students are established by the Board of Trustees and are subject to change whenever conditions necessitate. All assessments are on a per-hour basis. Students will be assessed the following tuition and fees for Fall 1997 and Spring 1998:

ON-CAMPUS UNDERGRADUATE TUITION AND FEE SCHEDULES

Semester Hours Enrolled	Illinois Residents			Non-Illinois Residents		
	Tuition	Student Fees	Total	Tuition	Student Fees	Total
1	\$ 90.00	\$257.49	\$ 347.49	\$ 270.00	\$257.49	\$ 527.49
2	180.00	280.23	460.23	540.00	280.23	820.23
3	270.00	302.97	572.97	810.00	302.97	1,112.97
4	360.00	325.71	685.71	1,080.00	325.71	1,405.71
5	450.00	348.45	798.45	1,350.00	348.45	1,698.45
6	540.00	371.19	911.19	1,620.00	371.19	1,991.19
7	630.00	393.93	1,023.93	1,890.00	393.93	2,283.93
8	720.00	416.67	1,136.67	2,160.00	416.67	2,576.67
9	810.00	439.41	1,249.41	2,430.00	439.41	2,869.41
10	900.00	462.15	1,362.15	2,700.00	462.15	3,162.15
11	990.00	484.89	1,474.89	2,970.00	484.89	3,454.89
12	1,080.00	507.90	1,587.90	3,240.00	507.90	3,747.90
13	1,170.00	507.90	1,677.90	3,510.00	507.90	4,017.90
14	1,260.00	507.90	1,767.90	3,780.00	507.90	4,287.90
15+	1,350.00	507.90	1,857.90	4,050.00	507.90	4,557.90

STUDENT FEE DISTRIBUTION

Sem. Hours Enrolled	STS Grant (1)	Student Attorney (2)	Student Center (3)	Student Activity (4)	Student Rec (5)	Athletic Fund (6)	Campus Rec (7)	Student Medical (8)	Revenue Bond (9)	Mass Transit (10)
1	\$3.00	3.75	4.00	\$ 1.56	\$ 5.16	\$ 4.83	\$0.16	\$228.00	\$ 4.95	\$ 2.08
2	3.00	3.75	8.00	3.12	10.32	9.66	0.32	228.00	9.90	4.16
3	3.00	3.75	12.00	4.68	15.48	14.49	0.48	228.00	14.85	6.24
4	3.00	3.75	16.00	6.24	20.64	19.32	0.64	228.00	19.80	8.32
5	3.00	3.75	20.00	7.80	25.80	24.15	0.80	228.00	24.75	10.40
6	3.00	3.75	24.00	9.36	30.96	28.98	0.96	228.00	29.70	12.48
7	3.00	3.75	28.00	10.92	36.12	33.81	1.12	228.00	34.65	14.56
8	3.00	3.75	32.00	12.48	41.28	38.64	1.28	228.00	39.60	16.64
9	3.00	3.75	36.00	14.04	46.44	43.47	1.44	228.00	44.55	18.72
10	3.00	3.75	40.00	15.60	51.60	48.30	1.60	228.00	49.50	20.80
11	3.00	3.75	44.00	17.16	56.76	53.13	1.76	228.00	54.45	22.88
12+	3.00	3.75	48.00	18.75	62.00	58.00	2.00	228.00	59.40	25.00

The fees which have been established by the Board of Trustees are payable by all students unless they are specifically exempted by the Board of Trustees. All fees are considered to be institutional in nature and require payment regardless of whether or not the student receives direct benefits or is in a location which permits access to such benefits.

STUDENT FEES INCLUDE

1. The Student-to-Student (STS) Grant Program Fee funds a student grant program. The fee is payable by undergraduate students only; those who do not wish to participate in the program may seek a refund of the fee by contacting Admissions and Records within ten days of the date of payment of fees.

2. The Student's Attorney Fee supports the budget of the Students' Attorney Program

3. The Student Center Fee provides funding for operation of the Student Center.

4. The Student Activity Fee funds student organizations and activities on campus; it includes \$1.15 in funding for Campus Safety and \$4 in support of Rainbow's End.

5. The Student Recreation Fee (REC) provides funds for operation of the Student Recreation Center and associated programs.

6. The Athletic Fund Fee partially funds the University's intercollegiate programs for men and women.

7. The Campus Recreation Fee funds recreational facilities and programs external to the Student Recreation Center.

8. The Student Medical Benefit Fee is comprised of the SMB: Primary Care Fee of \$84.00 and the SMB: Extended Care Fee of \$134.00. It funds the comprehensive Student Health Program that includes emergency service and hospitalization; specialty, primary and emergency dental care; and prevention programs. Students who pay these fees are entitled to full medical benefits at the Student Health Programs Clinic. If the student feels they have comparable coverage, they may seek a refund of the SMB: Extended Care Fee within the first two weeks of a fall spring semester or a summer session by contacting the Student Health Programs Insurance Department.

9. The Revenue Bond Fee (RBF) replaces funds which were previously obtained from tuition payments and used to underwrite the funded debt operations of the Student Center and University Housing.

10. The Mass Transit Fee provides funding for bus transportation to on-campus and certain Carbondale locations.

ADDITIONAL FEE INFORMATION

1. Students who register for regular term-length classes, after classes begin and students who register for shorter-than-term-length classes, including inter-session classes after the first listed meeting day of the class, will be assessed a Late Registration Fee of \$15. The fee is non-refundable and non-waiverable unless it is clearly shown that the late registration was caused by faculty or administrative action. Off-campus classes and registration in courses 599, 600, 601 and 699 are exempt from this fee

2. Graduate, medical, and law students are not required to pay the student-to-student grant program fee.

3. Permanent full-time or permanent part-time employees may be eligible for tuition and fee credit. Employees must have approval from their department head and the director of Human Resources before enrolling for courses.

4. Students taking off-campus courses (Section number range 800-899) are required to pay tuition, but do not pay student fees for those classes.

5. Students may also incur charges for departmental field trips, library fines and excess breakage. Students taking a course involving use of materials, as distinct from equipment, will ordinarily pay for such materials.

6. Students enrolling in Public Service Courses pay tuition and \$3 per hour divided equally between Student Center and Medical fees. Students enrolling in a combination of public service courses and other courses pay tuition and fees based on the on-campus tuition and fee schedule for the combined total of hours enrolled

7. Medical students at Springfield do not pay the Student Center Fee, Student REC Fee, Revenue Bond Fee, Students' Attorney Fee, or Athletic Fund Fee.

8. Students enrolling in off-campus courses pay tuition only. Students who combine enrollment in on- and off-campus courses pay tuition only for hours off-campus and tuition and fees for hours enrolled on campus.

9 Graduate students registering for Continuing Enrollment, course 601, pay only tuition and the Student Center Fee for credit associated with that course registration.

10. Graduate students who reside in the Kentucky counties of Ballard, Caldwell, Calloway, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon, McCracken, Marshall, Trigg and Union will be assessed tuition at the Illinois Resident rate.

11. Graduate students who are residents of Missouri, and who enroll in up to 6 semester hours in a semester, will be assessed tuition at the Illinois Resident rate. Those who register for more than 6 semester hours in a semester will be assessed the non-resident rate for all hours enrolled.

12. Tuition and program delivery charges for students enrolled in off-campus programs for the military are established in accordance with the Board of Trustee's policies relating to such charges for Southern Illinois University at Carbondale cost recovery programs and are not affected by the residency status of the student.

13. For the purpose of tuition assessment, all faculty, staff (including Civil Service employees), and graduate assistants, as well as their spouses and dependent children, shall be considered as resident students.

14. An identification card fee of \$10 will be charged to all first-time SIUC students who register for on-campus credit. This is a one-time charge. For additional information contact the Student Center ID Card office.

15. Senior Citizen Courses Act. Senior citizen as defined under the Act means a person 65 years of age or older whose annual household income is less than \$14,000. The statute requires the University to waive the tuition for such citizens unless classroom space is not available or if tuition paying students enrolled do not constitute the minimum number required for the course. Even where tuition must be waived, other fees may be charged.

16. In addition to the above fees, there is a graduation fee and a transcript fee. For further information contact the Office of Admissions and Records.

PAYMENT OF TUITION AND FEES

Tuition and fees are payable each semester during the academic year. Students will receive monthly statements of account through the University billing/receivable system. The statement lists all tuition and fees assessed, charges for University housing, charges for various other services, credits applied to the student's account from financial aid sources and cash payments. It shows the balance of these charges and credits as an amount owed by the student or an amount owed to the student. The statement also will show amounts which have been previously billed, amounts which are currently due during the billing period, and amounts which will be due in the future. Payment may be made either by mail or in person at the Bursar Office by the deadline date in accordance with instructions printed on the statement of account.

The top portion of the statement should accompany the payment. The bottom portion of the statement should be retained by students for their records. Prepayments of tuition and fees prior to detailed charges are not encouraged; however, early pay-

ments will be generally credited to the student's account and will be applied to charges made to that account.

The statements will be mailed to the student's billing, or if not one, the local address after the fifteenth of each month. December statements of account are mailed to the student's billing address, or if not one, the student's permanent address.

It is the student's responsibility to maintain an accurate local address or billing address to which a statement of account can be mailed. Failure to receive a bill does not relieve students of the responsibility for prompt payment of amounts due. See additional information under the heading Local, Permanent, and Billing Addresses below.

No student shall be enrolled until the student has either paid tuition and fees in full or has paid the initial installment or has a current cancellation waiver. Other amounts due from students at the time the initial installment payment of tuition/fees is due must also be paid or students will not be allowed to enroll. Students who fail to pay the first installment and all other past due charges or who fail to obtain a waiver of cancellation may have their registrations canceled and will be denied privileges available to a student regularly enrolled in the University. Students with canceled registrations who want to be enrolled at the University must reregister. They will be subject to payment in full or the installment plan in effect at the time of their re-registration. They may also be subject to a late registration fee.

A service charge of one and one-half percent per month will be assessed on all accounts which are delinquent. To avoid the service charge, students must pay the minimum amount due printed on the statement prior to the next billing date. More detailed information is in the *Schedule of Classes* published each semester.

Following the end of each semester, students not registered for the next semester who have delinquent account balances will receive a series of itemized statements requesting payment. If payments, or arrangements, are not made on a timely basis, the account may be placed with a collection agency with a collection fee added to the account. Should it be necessary for an outside agency to effect a collection, reasonable collection costs shall be 33 1/3% of such amount and shall be paid by the debtor. If the University obtains judgment from a court of competent jurisdiction, the debtor shall be liable for the collection agency fee as well as reasonable court costs and attorney's fees.

Students who process a program change which places them in a different tuition and fee category than the one for which they originally registered will be billed additional tuition and fees when appropriate. If the change places them in a smaller tuition and fee category and if they processed the program change within the necessary time frame, they will receive a refund provided their account carries no other charges.

Installment Payment Plans. There are several installment payment plans and eligibility will depend on where students attend class and when they register. The University reserves the right to alter the payment plans offered and in some plans to require prepayment of part or of all a student's charges prior to registration. The basic criterion for eligibility in installment payments is that the student must be attending classes on the Carbondale campus or School of Medicine classes in Springfield. Payment plans for students attending classes on the Carbondale campus or School of Medicine classes allow tuition and fees to be paid in up to four installments for fall or spring semesters and up to two installments for summer term, depending on when students process their registrations. Students who opt for the installment payment need only to pay the minimum amount due indicated on the May, July, or December statement of account by the stated deadline. There is no installment payment plan for students who only attend classes off-campus. A one and one-half percent service charge will be assessed on all minimum amounts not paid prior to the next billing. Students in military contractual programs are not subject to a service charge.

DEFERMENT OF TUITION AND FEES

When a student's financial aid has been delayed, or the funds which a student anticipates using to pay tuition and fees are unavailable by the regular due date for tuition and fee payment, the student may apply for an extension of the payment deadline date through a process called waiver of cancellation. Cancellation waivers are available to students who can demonstrate that they meet minimal eligibility criteria and can provide written verification of an ability to pay. Information on cancellation waivers is publicized each semester in the Office of Admissions and Records, the Bursar Office, the Financial Aid Office, and the *Daily Egyptian*. Eligibility criteria and procedural guidelines may vary from term to term and year to year. Students are advised to seek out the accurate information rather than assume they qualify.

Students applying for a cancellation waiver must first complete registration. Written verification from the source of funds to be used to pay tuition and fees must be presented in person to the Financial Aid Office for those students with approved scholarships, grants, or loans, or any combination of these. Instances of exceptional need will be referred to a financial aid officer when the source of funds is other than those identified above. Additional information on cancellation waivers is available in the Financial Aid Office. Phone or mail requests for deferments will not be accepted.

TUITION AND FEE REFUND POLICY AND PROCEDURES

Tuition and all general student fees shall be refunded to students who officially withdraw from the University by the withdrawal deadlines (see Deadline Dates above). Action on any request for refund of tuition and fees shall be in compliance with Board of Trustees policy and these procedures. For refund of tuition and fees prior to the withdrawal deadlines, the following will apply.

Request for a withdrawal from the University is initiated in the Office of Transitional Programs and approved by the student's academic dean as part of the normal withdrawal procedures.

Refund of tuition and fees based on withdrawal from the University on or prior to the withdrawal deadlines is made without consideration of the student's reason for withdrawing.

No tuition or general student fees shall be refunded in cases where withdrawal occurs after the deadlines stated in Board of Trustees policy, except for students in grave circumstances who demonstrate that, for reasons beyond their control, they are utterly unable to continue their educational programs. Refunds of tuition and general student fees approved in such cases are made at the University's discretion upon a determination by the chancellor or his designee of the existence of one of the following conditions.

Accident or illness occurring prior to the withdrawal deadline which incapacitated the student and made it impossible for them to withdraw prior to the deadline.

Accident or illness in the student's immediate family which occurs prior to the withdrawal deadline and is of such nature as to prevent the student from continuing their education.

Emotional or psychological trauma resulting from an incident which occurred prior to the deadline and for which the student is undergoing counseling or therapy.

A disciplinary, academic, or financial aid termination appeal which is not accepted if the appeal was initiated prior to the withdrawal deadline.

Induction into military service for a period not less than six months.

Students in military service with the State of Illinois pursuant to the orders of the Governor have the right to receive a full monetary credit or refund for funds paid to any Illinois public university, college or community college if the person is placed into a period of military service with the State of Illinois pursuant to the orders of the Governor and is unable to attend the university or college for a period of seven or

more days. Students may elect to receive course credit for all of their courses rather than a refund.

The refund of tuition and fees in cases where withdrawal from the University occurs after the deadlines specified in the Board of Trustees refund policy is governed by the following procedures.

The vice chancellor for Student Affairs or his designee will serve as the chancellor's representative for considering requests for refund of tuition and fees after the time period specified in the refund policy.

Request for such refunds are initiated in the Office of Transitional Programs which will furnish the student with the necessary information and appropriate form.

A student requesting a refund after the specified periods must withdraw from the University before the request for refund will be acted upon.

Tuition and fees will not be refunded for courses which have already been completed earlier in the semester and for which a final grade has been earned.

The student must submit written verification of the reasons supporting the request, i.e., (a) written verification from a physician as to the accident or illness to the student or in the student's immediate family and the student's inability to withdraw prior to the deadline; or (b) written verification from a physician or counselor which supports their statement concerning emotional or psychological trauma and which substantiates that the trauma resulted from an incident which occurred prior to the deadline; or (c) a copy of the letter denying a disciplinary, academic or financial aid termination appeal and verification that the appeal was filed prior to the withdrawal deadline; or (d) written correspondence from the military which verifies when the student is to report for military service and the length of time for which the student is expected to serve.

The student requesting the refund shall be required to substantiate to the Office of Transitional Program's satisfaction the nature, extent, and seriousness of conditions or circumstances which are the basis for the refund request.

The Office of Transitional Programs will make a decision on the request and inform the student as soon as practical. Refund approvals will then be forwarded to the Office of Admissions and Records for processing.

Local, Permanent and Billing Addresses

The University maintains both a local and a permanent address for students and a billing address for students who request a specific address for their statements. Accurate addresses are very important for students to ensure receipt of timely mail from the University.

The *billing address* is used only by the Bursar to mail the statement of account. If no billing address exists, the local address is used as the address for the Statement of Account in the months of January through November. In the absence of a billing address, the Statement of Account is mailed to your permanent address in the month of December only.

The *permanent address* maintained by the University is your permanent home address or the address at which you will promptly receive mail when you are absent from Carbondale.

The *local address* is your primary residence while classes are in session. It is used by the University to direct correspondence during the semester. In the months of January through November this address is used to mail your Statement of Account if no billing address exists.

Grading and Scholastic Regulations

Grading System Explanation

The grades of A, B, C, D, and F, are included in determining student grade point averages.

An *INC* is assigned when, for reasons beyond their control, students *engaged in passing work* are unable to complete all class assignments. An *INC* must be changed to a completed grade within a time period designated by the instructor but not to exceed one year from the close of the term in which the course was taken, or graduation, whichever occurs first. Should the student fail to complete the course within the time period designated, not to exceed one year, or graduation, whichever occurs first, the incomplete will be converted to a grade of F and the grade will be computed in the student's grade point average. Students should not reregister for courses in which an *INC* has been assigned with the intent of changing the *INC* grade. Re-registration will not prevent the *INC* from being changed to an F.

GRADING SYSTEM		
GRADE SYMBOL	DEFINITION	GRADE POINTS PER HOUR
A	Excellent	4
B	Good	3
C	Satisfactory	2
D	Poor	1
F	Failure	0
P	Pass. Used only in Pass/Fail system. See Grading System Explanation below.	
PR	Work in Progress. See Grading System Explanation below.	
W	Authorized withdrawal. See Grading System Explanation below.	
INC	Incomplete. See Grading System Explanation below.	
AU	Audit. No grade or credit earned. See Grading System Explanation below.	

For *mandatory* Pass/Fail courses, the grades of P, when the student's work is satisfactory, or F, when the student's work is unsatisfactory, may be recorded. For a P, the hours apply toward graduation but the grade does not affect the grade point average. For an F, the hours do not apply toward graduation but the grade does count in the grade point average. If a student receives an *INC* in a Pass/Fail course, the same regulations apply for completion of the work as apply for all other grades of *INC*, as explained above.

Students enrolling for an *Audit* must designate their intent to enroll on an *Audit* basis at the time of registration or prior to the end of the third week of a sixteen-week semester and prior to the end of the second week of an eight-week summer session. An equivalent prorated amount of time would be allowed for courses of shorter duration. Students registering for short courses must register for *Audit* prior to the beginning of those classes. Students registering for a course on an *Audit* basis receive no credit. Auditors' Course Request Forms must be marked accordingly, and they pay the same fees as though they were registering for credit. They are expected to attend regularly and to determine from the instructor the amount of work expected of them. If auditing students do not attend regularly, the instructor may determine that the student should not have a satisfactory (*AU*) audit grade. If the audited class is unsatisfactory, the grade will appear as *UAU*.

PR is an authorized grade for specifically approved undergraduate courses. For example, it is used for the required University Core Curriculum English 101 which is a course that has been designated as one in which students must receive a grade of C or better. The grade is given only to students who regularly attend class and attempt to complete the required work. The grade is to be used only once per student for any

given course. The course provides additional instruction for those students not making adequate progress. Students who receive a *PR* grade must reregister for the course within a time period not to exceed a year from the end of the semester in which the course is taken. The grade earned in the course for which the student re-registers will be included in the grade point average. Failure to complete the course within the year will result in the *PR* automatically becoming an *F*. The *F* will be included in grade point computation.

PASS/FAIL GRADING SYSTEM

Certain courses which, in the judgment of the department or program, have been determined to be inappropriate for the traditional grading system are designated as Mandatory Pass/Fail. Courses which carry this designation include the words, Mandatory Pass/Fail, at the end of the course descriptions in Chapter 6. For courses taken on a Mandatory Pass/Fail basis, completed grades will be either a *P* or an *F*. The grade of *P* is not included in the grade point average but the hours earned apply toward graduation. The grade of *F* is computed in the grade point average as a failure but no hours of credit are earned. If a student receives an *INC* in a Mandatory Pass/Fail course, the same regulations apply for completion of the work as apply for all other grades of *INC*, as explained in the Grading System Explanation above.

In addition to the Mandatory Pass/Fail courses, an Elective Pass/Fail grading policy was in effect through the end of Spring Semester, 1987. The regulations concerning the discontinued policy appear in the 1986-1987 Undergraduate Bulletin.

CHANGING OF GRADES

Grades given at the end of a course are final and may not be changed by additional work or submitting additional materials. When work is completed for a course in which an *INC* grade has been given, instructors notify the Office of Admissions and Records of that fact, along with the final grade to be given, by processing a Grade Change Card through the academic dean's office.

Occasionally, students may wish to question grades given, either for accuracy or for removal of grades in situations when they were unable to perform some required step for reasons beyond their control. Only the assigned instructor for a course has the authority to change a grade except in the instance when the instructor is no longer employed by the University. Extenuating circumstances which transcend faculty judgment of the instructor may be appealed through procedures established by the instructor's school or college. Matters related to faculty judgment in grading may not be appealed. Any change of grade must be approved and signed not only by the instructor but also by the departmental chair and the dean of the academic unit. An incomplete grade which is changed to a final grade need only be signed by the instructor.

Scholastic Standing

The matter of scholastic standing is quite often of importance to students both while in school and later when they present a transcript of their educational record in support of their application for employment or additional schooling.

At the end of each semester or session of attendance a grade report is prepared for each student showing, in addition to the grades earned that semester or session, the scholastic standing and the grade point average for that semester or session and for the overall record at Southern Illinois University at Carbondale. It is important that you understand the University's system for computing grade point averages and the various grade point average requirements.

Transferred grades are not to be used in determining students' calculated grade point averages, except that transfer students who are admitted on probationary

status will be required to earn a 2.0 average semester by semester until a total of 12 semester hours has been earned before they can be removed from probation.

The significance of the above should be clearly understood by transfer students when studying the general baccalaureate degree requirements. A 2.0 (C) average is required for the work taken at this University.

In computing students' grade point averages all grades of A, B, C, D, and F are included in determining the number of *quality* hours. Each hour of these grades (1 hour of A is worth 4 quality points) is given its numerical quality points, and the total number of quality hours is then divided into the total number of quality points to determine the student's grade point average.

All earned grades carrying quality point values are considered when computing students' grade point averages, including each earned grade in a repeated course that is taken prior to Summer 1996. Effective with courses taken Summer 1996 and beyond, only the last grade of the subsequently repeated course will count in the grade point average.

Scholastic Probation and Suspension System

Students are expected to make satisfactory progress toward a degree, certificate or other approved objective. To ensure that students are making progress their records are checked against the regulations below.

SCHOLASTIC PROBATION

When a student's semester average and the cumulative University average fall below a C average (2.0), the student will be placed on scholastic probation. A student on scholastic probation may continue enrollment at the University provided the student does not accumulate more than six negative points. See Positive and Negative Grade Points below for an explanation of how positive and negative points are calculated. The student with more than six negative points will not be suspended so long as the term average is C (2.0) or above. A student will remain in the category of scholastic probation until the cumulative University average is C (2.0) or higher.

While on scholastic probation students may not enroll for more than 14 hours per semester unless approved to do so by the dean of their academic unit. Students employed full time may not register for more than eight hours without approval of the head of their academic unit. Other limitations may be established by the academic unit within which the students are enrolled. Students enrolled in programs for the military or students enrolled in programs with a weekend or evening format are not restricted to the eight hour limit while on probation.

TRANSFER STUDENTS ADMITTED ON PROBATION

Transfer students admitted on scholastic probation will remain in that status until they have earned at least a C average at Southern Illinois University at Carbondale. If they earn below a C for any session while on scholastic probation, they will be placed on scholastic suspension.

SCHOLASTIC SUSPENSION

Students will be scholastically suspended from the University if they fail to meet the requirements of their conditional or probational status. Students placed on Scholastic Suspension may seek reinstatement after a minimum of two semesters' interruption but must furnish tangible evidence that additional education can be successfully undertaken. Some academic units have scholastic requirements in addition to the overall University requirements listed here. Students must learn and comply with the University requirements as well as those requirements applying to individual schools and colleges.

POSITIVE AND NEGATIVE QUALITY POINTS

Positive and negative quality points are assigned to grades above or below a C. There are two methods to figure points depending upon the information which is available.

Grade Slip. The grade slip printed at the end of each semester lists the hours used in calculating the average and the quality points earned. Since C has a value of two quality points on a 4 point scale, quality points equaling a C average are exactly twice the number of quality hours. All quality points over that amount are positive quality points. All quality points under the amount are negative quality points.

For example:

$$\begin{array}{rclclcl} \text{Quality Hours} & & \text{Quality Points} & & \text{Grade Point Average} \\ 60 & = & 120 & = & (\text{C}) 2.0 \end{array}$$

Twice the quality hours equals 120 quality points. This is a C (2.0) average. A student with 60 quality hours and only 115 quality points would have five negative points (1.92 average). A student with 30 quality hours and 55 quality points would have five negative points (1.83) average.

Grades and Hours of Credit Available. Whenever all grades and hours of credit are known and quality points have not been assigned as on the grade slip, a simple method is to assign positive and negative points as follows:

A	=	2 positive points per hour
B	=	1 positive point per hour
C	=	0
D	=	1 negative point per hour
F	=	2 negative points per hour

For example:

3 hours of A	X	2 positive points	= 6 positive points
3 hours of B	X	1 positive point	= 3 positive points
3 hours of C	X	0 points	= 0.
2 hours of D	X	1 negative point	= 2 negative points
4 hours of F	X	2 negative points	= 8 negative points

The ten negative points are balanced by only nine positive points so the sample has one negative point.

Negative points are also used to easily determine exactly what grades must be earned to raise the average to C. For example, a student with eight negative points could raise the average to C by earning four hours of A grade or eight hours of B grade, assuming all other grades earned are at least C.

Class Standing

The University requires students to earn at least 120 semester hours of acceptable credit in order to receive a baccalaureate degree. For academic classification purposes a freshman is a student who has completed fewer than 26 hours; a sophomore, from 26 through 55; a junior, from 56 through 85; and a senior 86 or more.

Academic Load

The University considers 12 hours as the minimum number to constitute full-time attendance. This is the figure used for enrollment reporting purposes, by the Illinois State Scholarship Commission, and for Public Law 358 on the undergraduate level. Students attending school under some type of scholarship or assistance program that requires them to be enrolled as full-time students should check with the University office administering the program on this point. Further information on Public Law 358 is available at the Financial Aid Office. Academic load guidelines are as follows:

LOAD	REGULAR SEMESTER	8-WEEK SUMMER SESSION
Minimum load for full time	12	6
Average load	15-16	7-8
Maximum load without dean's approval	18	9
Maximum load ¹	21	11

¹This maximum may be exceeded by very special action of the respective academic dean, and rarely more than once in the student's degree program.

Students on scholastic probation may not take more than 14 hours without approval of the dean of their academic unit. Students employed full-time may not register for more than eight hours.

Credit

UNIT OF CREDIT

The University is on the early semester calendar. All references to hours of credit in this catalog are to semester hours unless otherwise specified. One semester hour of credit is equivalent to one and one-half quarter hours. One semester hour of credit represents the work done by a student in a lecture course attended fifty minutes per week for one semester and, in the case of laboratory and activity courses, the stated additional time.

Program Flexibility for the Student

The University offers you a wide variety of programs on all higher educational levels. Specialized programs are available on the associate and baccalaureate levels. In addition, the University gives constant attention to methods whereby it might better serve present day educational needs. Described below are opportunities for you to earn credit through means other than the traditional classroom method. While greater flexibility is the goal, the University exercises appropriate supervision to ensure the flexibility is accompanied by educational soundness.

Credit by Means Other than Classroom Attendance

Several methods are provided for you to earn credit by means other than the traditional classroom method. The methods currently available are described below.

EXTENSION (OFF-CAMPUS) AND CORRESPONDENCE CREDIT

The University accepts credit earned through extension, off-campus, or correspondence programs toward the bachelor's degree. Not more than 30 semester hours may be taken in correspondence work.

Correspondence work is accepted when taken from institutions which are regionally accredited if the grade is of C quality or better. Southern Illinois University at Carbondale operates an individualized learning program similar to correspondence programs in which students may earn academic credit. More information about individualized learning is under the *Division of Continuing Education*.

The University offers off-campus courses whenever (1) it is apparent there is a need and potential enrollment to justify scheduling, (2) it is possible to obtain a faculty member to instruct the class, and (3) adequate laboratory and library facilities are available.

Persons may enroll for off-campus work on an audit basis provided facilities are available. They must receive permission of the instructor to do so, and they must pay the same tuition as though they were registering for credit.

Further information may be obtained from the Division of Continuing Education.

CREDIT FOR MILITARY EXPERIENCE

Students who have served one year or more of active duty and who have received an honorable discharge may receive two hours of aerospace studies credit, two hours of physical education credit, and two hours of health education credit. Service of six months to one year may result in two hours of freshman aerospace studies or army military science credit. Completion of basic training will be awarded two hours of physical education credit.

Credit will be accepted for DANTES subject standardized courses within the limitations enforced for proficiency credit. No credit is allowed for college-level GED tests. In evaluating credit possibilities based upon formal service-school training programs, the recommendations of the American Council on Education as set forth in the U.S. Government bulletin, *Guide to the Evaluation of Educational Experiences in the Armed Forces*, are followed.

In order to receive credit for military service, veterans must present a copy of discharge or separation papers to the Office of Admissions and Records, Evaluations Department.

HIGH SCHOOL ADVANCED PLACEMENT PROGRAM

Through the High School Advanced Placement Program high school students who are qualified through registration in an advanced placement course in their high schools or through other special educational experiences may apply for advanced placement and college credit through the Advanced Placement Program of the College Board. To receive credit, students must earn at least a grade of 3, 4, or 5.

The maximum credit granted through advanced placement examinations is thirty hours (fifteen for an associate degree). It is nonresident credit, does not carry a grade, and is not used in computing the students' averages. The thirty hour limit also includes any CLEP credit or proficiency that has also been earned.

Advanced classes which qualify for this purpose are offered in many high schools in specific subjects such as English composition, economics, foreign languages, history, biology, computer science, chemistry, government, mathematics, physics, and psychology. A national examination is given in each subject with the examinations administered through the Educational Testing Service. The examinations are prepared by a national committee of high school and college teachers and are intended to measure the achievement of the student and determine at what point the student should begin college work in the subject.

The credit to be granted at Southern Illinois University at Carbondale is determined by the appropriate department. The credit will be validated after 12 hours credit of C work or better in residence at SIUC. The following is a list of courses for which a student may currently receive credit:

1. Art History: Art and Design 237 (3 semester hours)
2. Biology: Plant Biology 115 (3 semester hours)
3. Chemistry: Chemistry 200, 201, 210, 211 (8 semester hours)
4. Comparative Government and Politics: Political Science 250 (3 semester hours)
5. Computer Science:
 - Computer Science A: Computer Science 202 (3 semester hours)
 - Computer Science AB: Computer Science 220 (3 semester hours)
6. Economics:
 - Microeconomics: Economics 240 (3 semester hours)
 - Macroeconomics: Economics 241 (3 semester hours)
7. English:
 - Language and Composition: English 101 (3 semester hours) with a score of 3 or 4 or English 120 (3 semester hours) with a score of 5. English 120 will complete the Core Curriculum composition requirement.
 - Literature and Composition: English 121 (3 semester hours)

8. European History: History 205a,b (6 semester hours)
9. Foreign Languages: credit to be determined in consultation with the chair of the Department of Foreign Languages and Literatures.
10. Government and Politics - U.S: Political Science 114 (3 semester hours)
11. Mathematics:
 - Calculus AB: Mathematics 150 (4 semester hours)
 - Calculus BC: Mathematics 150 and 250 (8 semester hours)
12. Music: credit to be determined in consultation with the director of the School of Music.
13. Physics:
 - Physics B: Physics 203a,b (6 semester hours) and Physics 253a,b (two semester hours) with a score of 4 or 5. A score of 3 qualifies the student to take a proficiency exam in the above courses.
 - Physics C, Part I: Physics 205a (3 semester hours) and Physics 255a (one semester hour) with a score of 4 or 5. A score of 3 qualifies the student to take a proficiency exam in the above courses.
 - Physics C, Part II: Physics 205b (3 semester hours) and Physics 255b (one semester hour) with a score of 4 or 5. A score of 3 qualifies the student to take a proficiency exam in the above courses.
14. Psychology: Psychology 102 (3 semester hours)
15. U.S. History: History 110 and 300 (6 semester hours)

Further information about the Advanced Placement Program may be obtained from the appropriate regional office of the College Board or by writing The CEEB, 45 Columbus Avenue, New York, New York 10023.

COLLEGE LEVEL EXAMINATION PROGRAM (CLEP)

Through the General Examinations of the College Level Examination Program (CLEP), students may apply for credit which will substitute for University Core Curriculum courses. Prior to the recording of CLEP credit on the student's transcript, the student must earn 12 hours of credit of C grade or above in residence at SIUC.

The scores listed below are the minimum required for credit. The scores listed are for tests taken after May, 1989. Students who took exams prior to May, 1989 should consult the 1988 *Undergraduate Catalog* for specific scores required. The exams listed below are the only exams which will be awarded University Core Curriculum credit. Also listed are the credit hours that may be awarded for each CLEP exam.

1. *Natural Science*. A score of 520 or above entitles the student to receive six semester hours credit of University Core Curriculum courses in Science.
2. *Social Sciences and History*. A score of 520 or above entitles the student to receive six semester hours credit of University Core Curriculum courses in Social Science.
3. *Humanities*. A score of 520 or above entitles the student to receive six semester hours credit of University Core Curriculum courses in Humanities.
4. *English Composition with Essay*. With a score of 565 or above on the CLEP English Composition with Essay examination, students will receive six semester hours of credit for University Core Curriculum English composition (English 120 and 102 for six semester hours).

A score of 540 to 564 entitles the student to receive (a) advanced placement in English 120 and (b) six semester hours of credit upon successful completion of English 120 with a grade of C or higher (three semester hours of English 120 and three semester hours of English 102).

5. *Mathematics*. A score of 580 or higher entitles the student to earn three hours of credit for Mathematics 113 which will fulfill the University Core Curriculum mathematics requirement.

If prior to taking the CLEP examination students have received a grade or audit in college level work in any discipline included in the CLEP exam, or if they have enrolled in such a course, they shall be ineligible for credit. An exception to this rule is made in the case of students who enroll in the Early Admission program. Such students receive university credit for courses taken during the Early Admission experience and for the CLEP credit earned.

Courses taken in the following disciplines are subject to the exclusion of CLEP credit for each examination listed.

Disciplines included in the science examination include plant biology, microbiology, physiology, zoology, chemistry, physics, earth science, geography and all University Core Curriculum Science courses.

The social sciences and history examination include the disciplines of western civilization: American history, Afro-Asian civilization, world history, political science, economics, anthropology, sociology, social psychology, social studies, and all University Core Curriculum Social Science courses.

The humanities examination includes the disciplines of literature: poetry, fiction, drama, non-fiction, creative writing; films and performing arts; art: art appreciation, art history, architecture (past and present); music: classical, modern or jazz; humanities: all general humanities courses; philosophy: aesthetics, ethics, general survey; and all University Core Curriculum Humanities courses.

The English composition with essay examination disciplines include rhetoric, composition, creative writing and English prefix courses.

The mathematics test includes all college-level mathematics.

Students may be exempted from all University Core Curriculum requirements if they (1) pass all five CLEP General Examinations before entering the University with these minimum scores; natural sciences, social sciences, and humanities, 520; English, 565; and mathematics, 580, and (2) complete the graduation option of the University Honors Program.

CLEP examinations should be taken at one of the national testing centers and the results sent to the local CLEP coordinator. The results are then forwarded to the Office of Admissions and Records for evaluation.

For further information, students should consult with their academic adviser.

PROFICIENCY EXAMINATIONS

Through its proficiency examination program the University recognizes the importance of providing encouragement for academically talented students. Such students are permitted to make application to demonstrate the mastery of certain courses through proficiency examinations. Application forms are available at the departmental offices.

The following general rules govern the proficiency examinations for undergraduate credit.

1. Students who believe they are qualified to take a proficiency examination should check with the department offering the course to determine their eligibility to do so; students scoring in the top ten percent of ACT are particularly encouraged to avail themselves of this opportunity.
2. Credit not to exceed thirty hours (fifteen hours toward an associate degree), including credit through the College Board, Advanced Placement Program, and the College Level Examination Program may be earned through proficiency examinations. Credit will be considered nonresident. (A combined total of 40 hours may be earned through proficiency examinations and credit for work experience.)
3. All University Core Curriculum courses are available for proficiency credit, subject to specified restrictions.

- 4. Upon passing proficiency examinations students are granted course credit and receive a *Pass* grade. Their records will show the name of the course, the hours of credit granted, and a notation credit granted by proficiency examination. Students who fail a proficiency examination receive a *Fail* grade. This results in no penalty to the students. They will not receive credit and there will be no official record regarding the proficiency examination. However, the proficiency examination grade report form will be in the students' files for reference purposes.
- 5. Students may not take proficiency examinations for the same course more than one time. Neither may they take a proficiency examination in a course in which they have previously received a grade. Students who are registered for a course may not receive credit by proficiency examination for that course unless they withdraw from the course by the date during the semester which would result in no course entry appearing on the transcript. This date is the end of the third week for a regular semester course, and a correspondingly shorter period for summer session or short courses. Individual departments may require the proficiency examination to be completed in advance of this date.
- 6. No credit granted by proficiency examinations will be recorded until the student has earned at least 12 hours of credit of C grade or above in residence at the University.

CREDIT FOR WORK EXPERIENCE

Southern Illinois University at Carbondale recognizes that there might well be a number of undergraduate programs for which work experience has a meaningful relationship. It, therefore, permits those undergraduate programs to grant credit for work experience that relates to the students' areas of specialization. The credit granted is to apply to the major program and is awarded only upon approval by the major departments. Credit earned by work experience is limited to 30 hours and any combination of credit for proficiency examinations and credit for work experience is limited to 40 hours. Credit granted for work experience is considered nonresident credit when granted for work that is not part of a regular instructional course. Students should consult with their major departments to see whether they approve credit for work experience.

Degrees Offered

Southern Illinois University at Carbondale grants the following degrees:

Associate in Applied Science	Master of Music
Bachelor of Arts	Master of Public Administration
Bachelor of Fine Arts	Master of Science
Bachelor of Music	Master of Science in Education
Bachelor of Science	Master of Social Work
Master of Accountancy	Doctor of Business Administration
Master of Arts	Doctor of Philosophy
Master of Business Administration	Doctor of Rehabilitation
Master of Fine Arts	

In addition to the above degrees, the University offers undergraduate courses in preprofessional areas.

The School of Law and the School of Medicine offer professional degrees. Information about the School of Law may be obtained by writing the dean, School of Law, Southern Illinois University at Carbondale, Carbondale, Illinois 62901. Information about the School of Medicine may be obtained by writing the dean, Southern

Illinois University School of Medicine, P.O. Box 19230, Springfield, Illinois 62794-9230.

For information concerning academic programs on the advanced degree level, refer to the Graduate Catalog or write the dean, Graduate School, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

Degree Requirements

ASSOCIATE DEGREE

Each candidate for an associate degree must complete a minimum of 60 hours of credit in approved courses. Each student must complete the residency requirement by completing a minimum of 15 semester hours of technical courses within a major for the Associate in Applied Science degree at Southern Illinois University at Carbondale. Each student must maintain a C average for all work taken at Southern Illinois University at Carbondale. In addition to the technical courses, each program requires certain University Core Curriculum courses to be taken. The degree-granting unit for the associate degree is the College of Applied Sciences and Arts.

BACCALAUREATE DEGREE

Each candidate for a bachelor's degree must complete the requirements listed below.

Hour Requirements. Each student must have earned a minimum of 120 semester hours of credit, although some programs require more. Of the 120 hours, at least 60 must be earned at a senior-level institution. All credit granted may be applied toward the 60-hour requirement unless the credit has specifically been designated as being from a two-year college or credit has been awarded based on attendance at a two-year school. Credit for work experience, CLEP, military credit, and proficiency examination credit awarded by an accredited senior-level institution are counted toward the 60-hour requirement. Mathematics 107 cannot be counted in the 120 hours required for graduation.

Residence Requirements. Each student must complete the residence requirement by taking the last year, which is defined as 30 semester hours, or by having three years of credit, which is defined as 90 semester hours at Southern Illinois University at Carbondale. Only credit for those courses for which the student has *registered* and for which a *satisfactory grade has been recorded* at Southern Illinois University at Carbondale may be applied toward the residence requirement hours. Students enrolled in programs offered for the military will have completed the residence requirement for the University upon completion of all courses required by the program.

Average Requirements. Each student must have a C average for all work taken at Southern Illinois University at Carbondale and a C average for all major work taken at the University.

Forgiveness Policy. The University has adopted a policy for students whose only graduation problem concerns the C average for all work taken at the University. Such students may ask that the average be computed by one of the following methods: (1) by excluding from calculation of the grade point average a maximum of ten semester hours of D or F grade earned outside the major which was taken prior to the last 60 semester hours of completed work at the University or, (2) by earning a grade point average of 2.10 or higher for the last 60 semester hours of work completed at the University. The student will be graduated if the average meets either of the two alternatives. It should be noted that the two alternatives are offered as a means of computing the grade point average for graduation only and may not be used for any other purpose.

Course Requirements. Each student must meet the University requirements and the requirements of the academic unit, the major, and the minor, if required. The University Core Curriculum Requirements which are explained in Chapter 3 total 41 semester hours of credit although there are methods available to reduce the number for certain students. The requirements of each college and for the specific major and minor programs are explained in Chapter 4.

Second Bachelor's Degree

A student may earn a second bachelor's degree upon completion of a minimum of 30 hours, making a total of 150 hours minimum, provided the student fulfills the requirements of the department or school and college for the second bachelor's degree. Students pursuing a second baccalaureate degree must meet the University Core Curriculum Requirements of 41 semester hours if the department or school or college so requires. Students may, however, complete a second bachelor's degree under the Capstone Option if the department offers this option for the first baccalaureate degree. If a student's first bachelor's degree is from another university, 30 hours in residence is required to fulfill the requirements for the second bachelor's degree. If the first bachelor's degree was earned at the University, a minimum of 10 semester hours of the 30 required must be taken in residence at the University.

Three-Year Baccalaureate Degree Program

It is possible for you to complete the regular four-year baccalaureate degree program in three years by utilizing proficiency examinations. The equivalent of one year of credit (30 semester hours) may be earned by this method. If you desire to follow the three-year program you should make that fact known to your academic adviser at the earliest possible date so that your eligibility can be determined. A combination of programs may be employed to accumulate these 30 hours as described above in the section on Credit by Means Other than Classroom Attendance.

Preprofessional Programs

Preprofessional students may, subject to certain conditions, obtain a bachelor's degree after three years' work (90 semester hours) at Southern Illinois University at Carbondale and one or more year's work in a professional school. During their three years of residence at the University, they need to have completed all requirements other than elective hours for the bachelor's degree which they are seeking.

In some cases the completion of major requirements is possible by their taking certain courses at the professional school, but this is permitted only upon the prior approval of the appropriate divisional head. Also, completion of at least one year of professional school with acceptable grades in an approved medical school, an approved dental school, an approved veterinary school, an approved law school, an accredited physical therapy school, a hospital plan approved by the University or an accredited school of osteopathy is required. In all cases, all University graduation requirements must be met. It is advisable for a student interested in this program to make the decision to seek a bachelor's degree before entering the professional school so that any questions may be clarified at an early date.

The 3/2 program of the College of Business and Administration is available to qualified transfer students and students majoring in areas other than business. The program permits a student to devote a part or all of the fourth year of study to fulfilling requirements for the Master of Business Administration degree. For details, contact the associate dean for graduate studies in the College of Business and Administration.

University Recognition of High Scholastic Achievement

Dean's List. At the end of each semester, a dean's list is prepared. The criteria for inclusion on the dean's list is established by each of the academic units. To be recognized as being on the dean's list, you must have been in attendance full-time (12 semester hours or more) and must have earned the average for the semester which has been specified by the academic unit. If you have met the criteria established, a notation will appear on your grade slip and your academic record at the end of the semester. The dean's list is recognition for a particular semester. It does not take into consideration your complete record.

University Honors Program. The University Honors program is explained in Chapter 4. Those who successfully complete the University Honors Program graduation option receive recognition on the academic record and on the diploma at the time the degree is recorded.

Departmental Honors. Honors courses, individual honors work, and honors curricula, all designed to serve the student with high scholastic potential, are offered by departments in the College of Agriculture, the College of Liberal Arts, and the College of Science. A departmental or academic unit honors program consists of no fewer than six nor more than fourteen semester hours in research or independent study which is counted toward the student's major. Some honors programs require a comprehensive examination at the end of the junior year and again at the end of the senior year. Grades may be deferred at the end of the first semester, but not from one school year to the next.

Scholastic Honors Day. Each spring a Scholastic Honors Day convocation is held to honor students exhibiting high scholastic achievement. All students who have maintained a cumulative grade point average of 3.50 or higher, and who have been full-time students during the entire academic year, are honored at this time. A 3.50 grade point average is required for all work taken at Southern Illinois University at Carbondale, and in the case of transfer students, the cumulative average must be at least 3.50 also. Each academic unit has its own convocation and each student is recognized individually on this day.

A variety of professional, departmental, and fraternal honorary organizations offer recognition and membership based upon scholastic achievement. Election or selection to most of these organizations is noted at the Scholastic Honors Day ceremonies. The following are examples of some of these organizations: Alpha Epsilon Rho, Alpha Lambda Delta, Beta Alpha Psi, Beta Gamma Sigma, Golden Key Honor Society, Kappa Omicron Phi, Pi Mu Epsilon, Pi Omega Pi, Tau Beta Pi, the Liberal Arts and Sciences Honor Society, and the Honor Society of Phi Kappa Phi. Selection to membership in these organizations is not reflected on the academic record or diploma.

Honors/Departmental Honors Recognition at the Time of Graduation. Graduating students with scholastic averages of 3.90 or higher receive *summa cum laude*; those with 3.75-3.89 receive *magna cum laude*; and those with 3.50-3.74 receive *cum laude*. These averages apply to all work at the University, and in the case of transfer students, the averages also apply to the cumulative record. Whichever of the honors apply is recorded on the student's academic record at the time the degree is recorded and on the diploma.

Graduation Procedures

The academic requirements for the various baccalaureate degrees are listed in Chapter 4. Presented here are the procedures students expecting to graduate must follow.

Graduation ceremonies are held each year at the end of the spring semester and the summer session. Degree candidates must apply for graduation with the Office of Admissions and Records (graduate students with the Graduate School) by not later than the end of the first week of the semester in attendance before the expected graduation date. Candidates who plan to complete requirements at the end of the fall semester must apply for graduation by the end of the first week of the fall semester. Although there is no ceremony at that time, degree candidates who complete requirements will have that fact indicated on their academic records and diplomas will be issued. Application forms are available in the Office of Admissions and Records (Graduate School for graduate students) and may be obtained by mail by writing that office.

A graduation fee is established for all persons receiving degrees. The fee does not cover the rental fee for the cap and gown or the cost of the invitations. Both of these items are ordered through the University Book Store in the Student Center. Questions regarding the cap and gown and the invitations should be referred to the University Book Store.

In addition to completing the steps for application for graduation, students are responsible for determining that they are meeting all graduation requirements and have no outstanding financial obligation to the University. To assure that students are meeting the academic requirements, each academic unit provides a graduation check-up service through its academic advisement process, through which the satisfying of academic requirements can be verified. Even though the University does provide an academic check on graduating students, this is done primarily to be sure that it is graduating students who have met the requirements. The advising of individual students as to their progress is a service provided them and does not relieve students of their responsibility to make certain they are meeting the requirements. Students should check with their academic advisers as to the procedures they should follow in this matter as they approach graduation.

Graduating students who have outstanding financial obligations or delinquent accounts with the University will not receive either the diploma or transcripts until their accounts are paid.

Attendance at commencement is not compulsory. If you do not plan to attend, notification must be sent to the Office of Admissions and Records. This information is needed for seating arrangements and for mailing purposes.

GRADUATION APPEAL

The University has a Graduation Appeals Committee whose function it is to hear student's petitions to be permitted to graduate even though they have not satisfied all University graduation requirements. The committee hears only those cases involving University requirements for the associate or baccalaureate degree. Appeal relative to a major or academic unit requirement is through the appropriate administrative official. Ordinarily, the Graduation Appeals Committee will give consideration to an appeal only if there is tangible evidence that the matter at issue is of an unusual nature and that it has resulted due to conditions beyond control of the student. Appeal is initiated through the Office of Admissions and Records and the student's academic dean.

Issuance of Transcripts

A transcript of the student's official educational record is issued by the Office of Admissions and Records under the following conditions: A transcript is sent, issued, or released only upon a student's request or with the student's explicit permission, except that such permission is not required when University faculty and administrative personnel or other educational institutions request transcripts for official purposes. In addition, requests will be honored from a philanthropic organization financially supporting a student and from a recognized research organization conducting educational research provided the confidential character of the transcript is protected. A transcript will be issued directly to a student upon request. The transcript will have the statement, Issued to the Student, on its face. Transcripts will be sent to recipients other than the student as requested, in writing, by the student. A transcript fee of \$2.00 will be charged to the student for every transcript the student requests. A transcript will not be sent, issued, or released if a student owes money to the University. For further information see the policy on the release of student information and access to student records in Chapter 7.

3 / University Core Curriculum and Courses



University Core Curriculum

Ann-Janine Morey, *Director*

The University Core Curriculum is pivotal to the university experience, and provides the enriching foundation for students to be successful in their major, and in life beyond the university. The Core Curriculum does not require that all students take exactly the same courses. However through a carefully selected menu of courses, this required program provides a solid grounding in the liberal arts and sciences, and promotes analytic and imaginative abilities that are essential for a life of inquiry, creativity and informed civic participation. To make the most of the Core Curriculum, students are required to complete their Foundation Skills courses (Composition, Speech, Mathematics) by the time they have completed 56 hours of coursework. Students are strongly advised to complete their Disciplinary Studies courses prior to enrolling in the Integrative Studies courses.

Further information about University Core Curriculum is available from the director of University Core Curriculum, College of Liberal Arts.

University Core Curriculum Goals

1. To develop analytic, critical, creative thinking skills so that students have both the knowledge and the maturity to achieve self fulfillment by analyzing and enjoying the diverse materials of human experience, and by creating meaning and beauty from the world around them.
2. To develop communication skills so that students can understand the ideas and orientations of others and express their own perspectives effectively, both in the written and spoken word.
3. To promote personal, social and environmental well-being, so that students can enhance the quality of their lives.
4. To foster students' interdisciplinary awareness, so that they understand relationships among fields of knowledge and cultural pluralities.
5. To contribute to students' understanding and appreciation of the intellectual and creative heritage of western civilization and to their understanding of how western civilization has shaped and been shaped by different cultures.
6. To enhance understanding and appreciation of cultures; specifically, to make students aware of the complex interactions among ethnicity, race, gender and class, and other issues pertaining to improving human relations.

University Core Curriculum Requirements

I. Foundation Skills	12
Composition	6
English 101, to be completed with a grade of C or better, and English 102. English 120, if completed with a grade of C or better, will also complete the composition requirement. Linguistics 101 and 105 will complete the composition requirement for foreign students.	
Mathematics	3

Mathematics 110, 113 or any higher level mathematics course numbered 108 or above with the exception of 114.	
Speech Communication 101	3
II. Disciplinary Studies	23
Fine Arts	3
Select one course from the following: Art and Design 101, Cinema and Photography 101, English 203, History 201, Music 103, Theater 101.	
Human Health	2
Select one course from the following: Food and Nutrition 101, Health Education 101, Microbiology 202, Physical Education 101, Physiology 201-3, Zoology 202.	
Humanities	6
Select one course each from Group I and II or select one Sequence.	
Group I: History 101a, 101b, Philosophy 103a, 103b, Foreign Languages and Literatures 101 or Women's Studies 101.	
Group II: English 121, 204, Philosophy 102, 104, 105, Foreign Languages and Literatures 230 or Women's Studies 230.	
Sequence I: History 101a and 101b	
Sequence II: English 121 and 204	
Sequence III: Philosophy 103a and 103b	
Science	6
Select one course from each group. ¹	
Group I: Chemistry 106, Geology 110, Physics 101 or Physics 103	
Group II: Plant Biology 115, Plant Biology 117 or Zoology 115	
Social Science	6
Select two courses from the following: (Students may take only one course in history to satisfy this area requirement.) Anthropology 104, Economics 113, Geography 103, History 110, 112, Political Science 114, Psychology 102, Sociology 108.	
III. Integrative Studies	6
Students are strongly advised to complete their Disciplinary Studies courses before enrolling in the Integrative Studies courses.	
Multicultural: Diversity in the United States	3
Select one course from the following: Art and Design 227, 247, Administration of Justice 203, Anthropology 202, Black American Studies 215, English 205, History 202, 210, Linguistics 201, Mass Communication and Media Arts 204, Music 203, Philosophy 210, 211, Political Science 278, Sociology 215, Speech Communication 201, Women's Studies 201.	
Interdisciplinary	3
Select one course from the following: Agriculture 300i, Art and Design 310i, Economics 302i, English 308i, Engineering 301i, 303i, Foreign Languages and Literatures 310i, 313i, Geography 303i, History 304i, Liberal Arts 300i, Philosophy 303i, 307i, 308i, 309i, Plant Biology 301i, 303i, Sociology 304i, 305i, 306i, Speech Communication 301i, Zoology 312i.	
Total	41

¹An exception is made for majors in Civil Engineering, Electrical Engineering, Mechanical Engineering, Mining Engineering, Electrical Engineering Technology and Mechanical Engineering Technology. These majors are permitted to use two physical science courses to satisfy the science requirement.

Some programs and upper division academic units require specific Core Curriculum courses. A student may determine these requirements by referring to specific major requirements in Chapter 4.

MEETING UNIVERSITY CORE CURRICULUM REQUIREMENTS

Core Curriculum requirements may be met by any of the following, subject to the rules and limitations listed:

1. Completion of Core Curriculum courses with a satisfactory grade. Each student must complete the Foundation courses (Composition, Speech, Mathematics) or their approved substitutes prior to or upon completing 56 semester hours of coursework. The student, working with the academic advisor, shall have the responsibility of meeting this requirement.

2. The Transfer student and the University Core Curriculum. Transfer students may satisfy the requirements of the University Core Curriculum by successful completion of the Illinois Transferable General Education Curriculum. Transfer students who have not completed all Core Curriculum requirements prior to enrolling at SIUC can have their transcripts evaluated and comparable courses will be applied toward the University Core Curriculum requirements on a course by course basis.

Completion of an associate degree in a baccalaureate-oriented program in an accredited Illinois two-year institution provides that the student will (a) be accepted with junior standing and (b) be considered to have completed the University Core Curriculum requirements. Associate degrees earned at other than Illinois two year institutions will be reviewed by the Office of Admissions and Records. If the degree is determined to be baccalaureate-oriented and to have comparable content and credit hour criteria, the same benefits will be extended to those graduates. Credit from an accredited two-year institution is limited only by the provision that students must earn at least 60 semester hours of work at the University or at any other approved four-year institution and must complete the residence requirements for a degree from the University.

Transfer students who have not earned a baccalaureate-oriented Associate of Arts or Associate of Science from an accredited Illinois institution prior to attending SIUC, but who have been certified by a participating Illinois institution as having completed the Illinois Transferable General Education Curriculum (with a minimum of at least 37 semester hours), will be considered as having fulfilled the SIUC Core Curriculum.

Transfer students who have satisfactorily completed courses within the Illinois General Education Core Curriculum at an accredited Illinois institution will be granted credit toward fulfilling SIUC's comparable Core Curriculum requirement.

Students who have received a bachelor's degree from an accredited institution will also be considered to have their University Core Curriculum complete.

Additional information concerning admission of a transfer student and the evaluation of transfer credit can be found in the sections of this catalog pertaining to those specific programs.

3. Completion of departmental courses listed as substitutions for University Core Curriculum courses. Substitutions for Core Curriculum courses are limited to 12 hours.

4. Students who have started their post-secondary education at Southern Illinois University at Carbondale or another accredited institution beginning Summer 1989 to Spring 1996 may use course credit from the former General Education program. All approved substitutions for the former program will be honored. Students may not use more than one General Education course to count for more than one University Core Curriculum requirement. Students should consult their collegiate unit advisors for further information regarding the translation of specific courses.

5. Completion of departmental courses listed as substitutions for University Core Curriculum courses or proficiency credit by examination for Core Curriculum courses or approved substitute courses. All Core Curriculum courses are eligible for proficiency credit, subject to specified restrictions. (See proficiency examinations in Chapter 2.) Students should contact the individual department for specific information.

Proficiency credit via General Examinations of the College Level Examination Program (CLEP) or Advanced Placement (AP). Credit given through the High School Advanced Placement Program, the College Level Examination Program or proficiency examination will be nonresident, will not carry a grade, and will not be used in computing the student's grade point average. The credit will be validated after 12 hours credit in residence at Southern Illinois University at Carbondale. A \$15 charge will be assessed for proficiency examinations taken at Testing Services.

University Core Curriculum Substitutions

List of Approved Substitutions. The department courses which have been approved as substitutions for University Core Curriculum courses are listed below. In no case does the departmental course substitute for more credit hours than the credit hours allowed in the comparable University Core Curriculum course.

UNIVERSITY CORE CURRICULUM	APPROVED SUBSTITUTES
ANTH 202	ANTH 310g
AD 101	AD 207a, 237
CHEM 106	CHEM 140a, 200 and 201, or 222a
ECON 113	ECON 214, 215, 240, 241 or ABE 204
ENGL 205	ENGL 225, 325 or WMST 225
GEOL 110	GEOL 220
HIST 110	HIST 301
HIST 210	HIST 300
MICR 202	MICR 444 or ZOOL 214
MUS 103	MUS 357a or 357b
PHIL 102	PHIL 204 or 205
PHIL 104	PHIL 340
PE 101	PE 114
PHYS 101	PHYS 203a and 253a, 203b and 253b, 205a and 255a, 205b and 255b, or ASA 126
PHYS 103	PHYS 203b or 205b
PHSL 201	PHSL 310
PLB 115	BIOL 200, MICR 201, PLB 200 or ZOOL 118, 220a or 220b
PLB 303i	ZOOL 404
ZOOL 202	MICR 444 or ZOOL 214
ZOOL 115	BIOL 200, MICR 201, PLB 200 or ZOOL 118, 220a or 220b
Humanities Group 1 or Group 2	A student may substitute up to a maximum of three credit hours with either a third semester of a foreign language or a first semester or more advanced course in Latin or Greek.

A maximum of twelve semester hours of approved coursework may be substituted for University Core Curriculum courses, with the exception of approved University Honors substitutions. A maximum of three semester hours of the University Honors Program may be substituted in each of the sub-areas of Fine Arts, Human Health, Multicultural: Diversity in the United States, and Interdisciplinary; and a maximum

of six semester hours of the University Honors Program may be substituted in each of the sub-areas of Humanities, Science and Social Science, subject to the advance determination by the director of the University Honors Program and the approval of the University Core Curriculum Executive Council.

University Core Curriculum Courses

The first entry for each course is a three digit numeral plus, in some cases, a single letter which together with the subject area, serves to identify the course. The number followed by the dash represents the semester credit hours.

Next is the title, followed by a description of the course. If certain requirements must be satisfied before enrollment in a course, they are listed as prerequisites.

I. FOUNDATION COURSES

ENGL 101-3 English Composition I. The first course in the two-course sequence of composition courses required of all students in the University. It is designed to give students practice and experience in writing and to help students write better and with greater confidence and enthusiasm. It teaches students the processes of writing, the final production of a text, and the strategies they need to write in different contexts and to produce texts which are appropriate to varying contexts. A minimum grade of C is required.

ENGL 102-3 English Composition II. The second course in the two-course sequence of composition courses required of all students in the University. Using culturally diverse reading materials, the course focuses on the kinds of writing students will do in the University and in the world outside the University. The emphasis is on helping students understand the purpose of research, develop methods of research (using both primary and secondary sources), and report their findings in the appropriate form. Prerequisite: English 101 or equivalent with a minimum grade of C.

ENGL 120-3 Freshman Honors Composition. This course fulfills the Foundation Skills composition requirement. Students will write critical essays on important books in the following categories: autobiography; politics; fiction; eyewitness reporting; and an intellectual discipline such as philosophy or science. Prerequisite: top 10 percent of the English section of the ACT or the qualifying score on the CLEP tests.

MATH 110-3 Non-Technical Calculus. The elements of differentiation and integration. The emphasis is on the concepts and the power of the calculus rather than on technique. It is intended to provide an introduction to calculus for non-technical students. This course does not count towards the major in mathematics. No credit hours for this course may be applied to fulfillment of any degree requirements if there is prior credit in Mathematics 140, 141 or 150. Prerequisite: three years of college preparatory mathematics including algebra I, algebra II, and geometry. In addition, students must have satisfactory placement scores or obtain the permission of the Department of Mathematics.

MATH 113-3 Introduction to Contemporary Mathematics. Elementary mathematical principles as they relate to a variety of applications in contemporary society. Exponential growth, probability, geometrical ideas and other topics. This course does not count towards the major in mathematics. Prerequisite: Mathematics 107 or three years of college preparatory high school mathematics including geometry and intermediate algebra. New students must present satisfactory placement scores or obtain the permission of the Department of Mathematics.

MATH 108 and above -3 Mathematics courses that may be used for the three hour University Core Curriculum mathematics requirement include all MATH prefix courses with the exception of Mathematics 107 and 114.

SPCM 101-3 Introduction to Oral Communications: Speech, Self and Society. This course provides theory and practical application relevant to students' development of basic oral communication competencies appropriate to a variety of contexts as situated in a culturally diverse world.

II. DISCIPLINARY STUDIES

Fine Arts

AD 101-3 Introduction to Art. A course in the comparative study of visual art in the history of civilizations. The course, using slide lectures, studio labs taught by graduate assistants, readings in textbooks, and examinations, raises the student's familiarity and practical knowledge of formal, social and critical issues germane to the visual arts. The courses pedagogical method is inclusive of diverse cultures and traditions by means of comparative and thematic analysis.

CP 101-3 History and Analysis of Cinema. An introduction to world cinema. To include film as entertainment, art, personal, expression, education and cultural/ideological expression. Modes of film including narrative, documentary, animation and experimental are studied.

ENGL 203-3 Film as Literary Art. This course examines the influential role literature has on the cinematic tradition both in the past and present. It intends to emphasize the artistic and visual debt cinema owes to literature by concentrating on major achievements and analyzing them accordingly.

HIST 201-3 Art, Music and Ideas in the Western World. The historical evolution of the visual arts, architecture and music in the context of society and literature, from ancient Greece to the present. It emphasizes the fundamental historical relationship of the different genres of human expression in Western culture.

MUS 103-3 Music Understanding. A study of the historical development of Western music and the listening skills necessary to perceive the expressive aspects of each style.

THEA 101-3 Theater Insight. Through lectures, discussions, project, text readings and written critiques, students examine how plays are written and produced, and how these plays reflect the people and cultures that produce them.

Human Health

FN 101-2 Nutrition: Contemporary Health Issues. This course integrates nutrition and promotion of health through prevention of disease and will answer questions found daily in the media regarding nutrition. Topics emphasized are functions of basic nutrients, impact of culture, gender, ethnicity, social environments and life-style on nutrition and health.

HED 101-2 Foundations of Human Health. This course is designed to examine contemporary health-related issues for all dimensions of the individual—physical, mental, social, emotional and spiritual—through focus on health promotion and disease prevention. Emphasis is placed on maintaining or improving quality of life by developing personal and social skills (decision-making, communication, stress management, goal setting) across health education content areas, as well as identifying and accessing appropriate health-related resources.

MICR 202-2 Human Genetics and Human Health. (Same as Zoology 202.) Acquaints the student with the role played by genetic information in human development and disease. Discussion topics will include genetics and human diversity, the interaction of genetic information and the environment, the concept of genetic disease, the mechanisms and ethics of gene therapy, and the possibilities of manipulating the genetic material.

PE 101-2 Current Concepts of Physical Fitness. To foster a thorough understanding of scientific principles of physical fitness and to enhance the ability to utilize physical exercise toward achievement of healthful living.

PHSL 201-3 Human Physiology. A course which relates the normal function of the human body to the disruptions which occur in a variety of disease states. Three lecture hours per week. Not open to students who have taken 310.

ZOOL 202-2 Human Genetics and Human Health. (Same as Microbiology 202.) Acquaints the student with the role played by genetic information in human development and disease. Discussion topics will include genetics and human diversity, the interaction of genetic information and the environment, the concept of genetic disease, the mechanisms and ethics of gene therapy and the possibilities of manipulating the genetic material.

Humanities

ENGL 121-3 The Western Literary Tradition. The course offers a critical introduction to some of the most influential and representative work in the Western literary tradition. Emphasis is on the interconnections between literature and the philosophical and social thought that has helped to shape Western culture.

ENGL 204-3 Literary Perspectives on the Modern World. The course offers a critical introduction to literary works that convey the complexity and challenge of social life in the twentieth century, using a set of representative topics as focal points: culture and community; gender and ethnicity; war and politics; and science and technology. Course may be taken as a sequence to 121, *The Western Literary Tradition*, but 121 is not a prerequisite for this course.

FL 101-3 Classical Civilization. (Same as Women's Studies 101.) A survey of classical civilization from the Minoans to the Roman Empire with three foci: Homeric and Classical Greece, and the Roman Experience as seen by its artists.

FL 230-3 Classical Mythology. (Same as Women's Studies 230.) An inquiry into the nature of myth and its relevance today while studying selected myths principally of the Greeks and Romans.

HIST 101-6 (3, 3) The History of World Civilizations. (a) To industrialization (b) Since the Age of Encounter. A survey of various civilizations in the world from prehistory to the present with particular attention to non-Western cultures.

PHIL 102-3 Introduction to Philosophy. This course introduces fundamental philosophical issues across a broad spectrum. Problems in metaphysics, epistemology and ethics will be among the areas explored. Emphasis throughout is on developing in the student an appreciation of the nature of philosophical questioning, analyzing and evaluating arguments reflecting on the nature of human existence.

PHIL 103-6 (3, 3) World Humanities. This course will explore the rise, development and interaction of the major world civilizations as embodied in ideas and their expressions in religion, philosophy, literature and art. The great traditions of Near Eastern, European, Central Asian, Indian, Chinese and Japanese cultures will be examined. (a) The first semester will cover the beginnings of mythic symbolization, the development of moral and religious ideas in the early river civilizations, the dawn of philosophical reflection, and the rise and collapse of the unifying empires of Rome, the Gupta and the Han. (b) The second semester will cover the re-birth of civilizations in Islam, medieval Europe and China; their transformations in the modern era, especially

due to science and technology; and the question of contemporary global coexistence and understanding (103a and 103b can be taken out of sequence).

PHIL 104-3 Ethics. Introduction to contemporary and perennial problems of personal and social morality, and to methods proposed for their resolution by great thinkers past and present.

PHIL 105-3 Elementary Logic. Study of the traditional and modern methods for evaluating arguments. Applications of logical analysis to practical, scientific and legal reasoning, and to the use of computers.

WMST 101-3 Classical Civilization. (Same as Foreign Languages and Literature 101.) A survey of classical civilization from the Minoans to the Roman Empire with three foci: Homeric and Classical Greece, and the Roman Experience as seen by its artists.

WMST 230-3 Classical Mythology. (Same as Foreign Languages and Literatures 230.) An inquiry into the nature of myth and its relevance today while studying selected myths principally of the Greeks and Romans.

Science

CHEM 106-3 Chemistry and Society. Exploration of the many implications that chemistry has upon modern society. Topics include air and water quality, global warming, acid rain, fossil, solar and nuclear fuels, nutrition and drugs. Three lectures per week except that every other week a three-hour lab is substituted for one of the lectures that week.

GEOL 110-3 Geology and the Environment. Examines human interaction with geologic processes and hazards, including earthquakes, volcanoes, landslides and flooding; occurrences and availability of geologic resources, such as energy, water and minerals; and land-use planning, waste disposal and environmental impact. Two lectures and one laboratory per week.

PHYS 101-3 The Physics of Modern Communications: From Hi-Fi Sound to Laser Beams. The laws of nature necessary for understanding modern communications such as high fidelity, sound, radio, television and laser beams are presented. Topics include wave phenomena, sound, electricity, magnetism and light. Applications to sound recording and communications and the technical vocabulary necessary to critically evaluate high fidelity equipment are emphasized.

PHYS 103-3 Astronomy. Fundamental concepts of the physical sciences are used in the exploration of the observable universe. Studies include the history and techniques of astronomy, planets, stars, black holes, galaxies and cosmology. Lectures are supplemented by outdoor astronomical observations and/or indoor laboratory exercises.

PLB 115-3 General Biology. (Same as Zoology 115.) Introduction to fundamental biological concepts for non-life science majors interested in learning about interrelationships of human, plant and animal communities. Integrated lecture and laboratory cover topics that include structure and function of living systems, reproduction and inheritance, evolution, biological diversity and environmental biology. Laboratory applies scientific methods to the study of living systems.

PLB 117-3 Plants and Society. The relationship between plants and human society: historical and modern applications of plants to the human experience; centers of botanical origins and domestication of crop plants; theories on native plant and crop conservation; medicinal plants; making sound decisions on current and future problems of the environment; and plant genetics and biotechnology. Labs will include: hands-on experimentation; field work in natural plant communities, supermarkets and farmer's market; and visitations to plant research facilities. A field trip fee will be assessed.

ZOOL 115-3 General Biology. (Same as Plant Biology 115.) Introduction to fundamental biological concepts for non-life science majors interested in learning about interrelationships of human, plant and animal communities. Integrated lecture and laboratory cover topics that include structure and function of living systems, reproduction and inheritance, evolution, biological diversity and environmental biology. Laboratory applies scientific methods to the study of living systems.

Social Science

ANTH 104-3 The Human Experience: Anthropology. This course explores different human lifeways around the world, past and present. It investigates the question of what is universal to all humans and the myriad ways they differ, through studying modern people, the remains of past cultures through archaeology, and human origins and physical variation.

ECON 113-3 Economics of Contemporary Social Issues. An examination of the basic economic problems confronting U.S. society and the world today. The analysis is undertaken utilizing fundamental economic concepts with emphasis on alternative economic policies. Topics as diverse as health care, the national debt, crime, pollution and international trade are addressed.

GEOG 103-3 World Geography. Examination of the world's major geographic patterns, the diversity of environments, cultures and economic activities, differences between developing and developed nations, interdependence of nations and regions through communication and trade, and in-depth assessment of representative environmental issues.

HIST 110-3 Twentieth Century America. The history of the United States since 1900. Surveys cultural, social, economic and political development, with special emphasis on domestic pluralism and changing international roles.

HIST 112-3 The Twentieth Century World. The history of Europe, Asia, Africa and Latin America since 1900. Emphasis on political conflict, economic development, social change and cultural transformation in an increasingly integrated world.

POLS 114-3 Introduction to American Government and Politics. Examines the structure of American national government, the cultural context, and the operation of our political system. Focuses on constitutional foundations of American government, how difference in race, gender, and culture affect the political system, and the American attempt to deal with equality, liberty and order, conflict and cooperation.

PSYC 102-3 Introduction to Psychology. An examination of the variables related to the origins and modifications of human behavior using the viewpoints and techniques of contemporary psychology. Purchase of syllabus from local vendor is required.

SOC 108-3 Introduction to Sociology. An introduction to the sociological perspective on human behavior, the structure and processes involved in social relationships, social stratification and inequality, social institutions and social change. A survey of major areas of interest in sociology.

III. INTEGRATIVE STUDIES

Multicultural: Diversity in the United States

AD 227-3 History of African American Art. A history of African American visual arts, with a brief examination of the arts of various nations of Africa and how they affected art in America. Craft arts, architecture, painting and sculpture will be considered from the slave trade era to the civil war era; the Harlem Renaissance and other 20th century movements to the present day.

AD 247-3 History of Latin American Art. Latin American Arts from the Spanish Conquest to the present will be examined, including painting, sculpture, architecture, fibers, ceramics and metals. A few weeks will be spent on Pre-Columbian art. Considers the cultural exchanges between North America and Mexico, Central and South America.

AJ 203-3 Crime, Justice and Social Diversity. This course examines how social heterogeneity and inequality influence the processes involved in the definition and regulation of behavior through law, particularly the criminal law. Factors such as race, ethnicity, gender and class are related to definitions of crime and justice, and to the likelihood of being the victim of crime. The differential influence of the operations and outcome if the criminal justice system on diverse groups in U.S. society is emphasized.

ANTH 202-3 American Cultures. Through studying a variety of topics, such as family, education, health care, and popular culture, this course surveys the wide variety of cultures that make up the United States.

BAS 215-3 Black American Experience in a Pluralistic Society. A study and understanding of the evolution of issues of pluralism in contemporary African American society. Black American Experience in a Pluralistic Society provides an interdisciplinary analysis of ideological and practical problems of racism, integration, class, equity, social institutions as they relate to the Black American experience.

ENGL 205-3 The American Mosaic in Literature. The course offers a reading and analysis of narratives of cross-cultural contact through representative topics: the first encounters between Native Americans and Europeans; captivity, slavery and escape; immigration and city life; and cultures and families in transition. Emphasis is upon the various fictional and non-fictional literary forms in which the American pluralistic experience has been expressed.

HIST 202-3 America's Religious Diversity. An introduction to the basic concepts and histories of the world's religions and their place in American society. The purpose is to increase our understanding of cultural and religious diversity and how the various religious traditions inform our worldviews.

HIST 210-3 American Heritages. The American experience as expressed in key texts written prior to the Twentieth Century. Emphasis on American pluralism and controversies related to race, ethnicity, gender and class.

LING 201-3 Language Diversity in the USA. An examination of different varieties of English and the growing presence of other languages in the United States. Local, regional and national perspectives are used to review current patterns of language diversity and to explore the impact of language issues on policies and practices in education, the legal system and the work place.

MCMA 204-3 Alternative Media in a Diverse Society. The freedoms guaranteed in the First Amendment have resulted in a multitude of alternatives to the establishment media. These alternative media give voice to a range of communities ignored or suppressed by the dominant culture. Publications, alternative art spaces, film, radio and television messages and the groups and individuals that create them are examined. Not for graduate credit.

MUS 203-3 Diversity and Popular Music in American Culture. A study of the development of American popular music, particularly in relation to the different cultural groups which spawned it.

PHIL 210-3 The American Mind. This course will survey the diverse traditions, ideas and ideals that have shaped American culture in the past and today. Major works from Native American, African-American, feminist, Puritan, Quaker and American Zen Buddhist writers may be used as well as those from such intellectual movements as the Enlightenment, Transcendentalism and Pragmatism.

PHIL 211-3 Philosophy and Diversity: Gender, Race and Class. This course is a philosophical introduction to diverse perspectives within modern American culture. It will address through reading and discussion important contemporary moral and social issues from the perspective of nontraditional orientations including African American, Native American and American feminism. The resources of philosophy and other related disciplines such as psychology, sociology and literature will be used to develop a culturally enriched perspective on important contemporary issues.

POLS 278-3 Domestic Sources of American Foreign Policy. A general survey of the American foreign policy process. Special attention is given to the diversity of ethnic, racial and religious groups in the US and how

these groups attempt to shape foreign policies in ways that meet their specific domestic and international interests.

SOC 215-3 Race and Ethnic Relations in the United States. Current theory, research, and events in race-ethnic relations in the U.S., including the intersection of class, gender and sexuality. Topics include the European colonization of North America, dynamics of immigration, identity formation among ethno-racial groups, and political economy of racism.

SPCM 201-3 Performing Culture. A critical examination of human communication—from everyday conversation to cultural formation—as performance. Lecture and discussion format with consideration of primary texts drawn from conversational transcript, multicultural literature and popular culture.

WMST 201-3 Multicultural Perspectives on Women. This survey will cover important issues within women's studies in the United States and will be interdisciplinary and multicultural in nature. The topics will include language, media, education, family, labor, politics, literature and the arts. Issues of race, class, gender and culture will be examined consistently within each topic.

Interdisciplinary

AGRI 300I-3 Social Perspectives on Environmental Issues. (Same as Liberal Arts 300i.) Case studies (e.g., rural village in developing nation; small town in the U.S.; city in developing nation) are used to learn how different societies and groups deal with their specific environmental issues, and how culture and economic factors affect their perspectives and actions.

AD 310I-3 Mythology in Art. Through multicultural examination of myth as manifested in the visual arts, in selected cultures from prehistoric to modern times. Both European and Tribal cultures will be examined. This course will explore the principal literary sources from myth as they relate to the visual tradition, with special attention to the representations; the relationships between preliterate oral traditions; and the influence of visual mythmaking on the literary tradition.

ECON 302I-3 History and Philosophy of the World's Economic Systems. An investigation into how economic systems coexist with, and determine, or are determined by, the political and social structures in internationally diverse countries. Utilizing both economic concepts and an institutional approach the evolution of systems in nations such as Russia, Japan, the United States, China and other will be explored.

ENGL 308I-3 Interdisciplinary Studies in Literature. The course offers seminars in the major works that have shaped our understanding of the modern world through interdisciplinary awareness and study. Seminar topics are: Studies in Modernism; Irish Studies; The Politics of Empire; and Literary Studies of Film. The topics will be offered on a rotating basis.

ENGR 301I-3 Humans and Their Environment. An introduction to the study of the relationship between humans, resource consumption, pollution and the resulting environment. The effects of current human pollution and resource consumption on the environmental quality of the future. The interrelation of human population, resource consumption and pollution. Methods of minimizing resource consumption and human pollution through both technological controls and changes in human behavior.

ENGR 303I-3 The Role of Energy in Society. Lectures, discussions and class projects directed at understanding the role of energy, power and related concepts in society; in the past, the present and the future. Review of current energy resources and use patterns, as well as projections for new energy conservation techniques and the development of alternative energy technology. An overview of worldwide energy needs, seeking to identify future limits on energy use attributable to environmental, economic, political and other technological and evolutionary constraints. Prerequisite: satisfactory completion of three hours of Core Curriculum Science recommended.

FL 310I-3 Classical Themes and Contemporary Life. Specific aspects of Classical Civilization are compared with aspects of our own society. In alternate years, the course will treat different themes: Drama's Birthplace; Classical Athens; Roman Heroes and Anti-Heroes, or Athletics, Sports and Games in the Ancient World.

FL 313I-3 East Asian Civilization. An introduction to East Asian Cultural traditions, literature, philosophy, history, art and social organization of China and Japan.

GEOG 303I-3 The Earth's Biophysical Environments. Deals with components of the biophysical environment, including weather and climate, tectonics and geomorphic, soil-forming and ecologic processes as they create dynamic landscapes. Environmental issues tied to landscapes are presented and debated. Laboratories combine field studies, data analysis, computer simulations and discussions about issues related to environmental processes.

HIST 304I-3 Islamic Religion and Culture. Examines religious, cultural and socio-political developments in the Islamic world from the Prophet Muhammad to the present. Includes modernization and current problems in global contexts.

LAC 300I-3 Social Perspectives on Environmental Issues. (Same as Agriculture 300i.) Case studies (e.g., rural village in developing nation; small town in the U.S., city in developing nation) are used to learn how different societies and groups deal with their specific environmental issues, and how culture and economic factors affect their perspectives and actions.

PHIL 303I-3 Philosophy and Literature. An examination of (1) literary and other artistic works which raise philosophic issues and (2) philosophic writings on the relationship between philosophy and literature. Possible topics include: sources of and contemporary challenges to the traditional Western idea that literature cannot be or contribute to philosophy; the role of emotion, imagination and aesthetic value in philosophic reasoning; the role of literature in moral philosophy; philosophic issues of interpretation.

PHIL 3071-3 Philosophy of Science, Nature and Technology. Interdisciplinary study of major humanistic critiques of technology, science and nature; analysis of topics such as ecology, the information revolution, aesthetics and ethics in various branches of science and technology, relation of science to technology.

PHIL 3081-3 Asian Philosophy. An examination of some major Asian philosophy traditions, such as Vedanta, Buddhism, Confucianism, Taoism, or Sufism, in their historical and social contexts.

PHIL 3091-3 Philosophy of Politics, Law and Justice. An exploration of classical and modern theories of law and justice with special attention to their implications for important contemporary political issues.

PLB 3011-3 Environmental Issues in the Contemporary World. Fundamental biological and ecological processes important in the individual, population and community life of organisms integrating with the philosophical and ethical relationships of the contemporary, domestically diverse human society are examined. Emphasis is placed on a pragmatic understanding of environmental issues. Prerequisite: strongly recommend completion of University Core Curriculum Science requirements.

PLB 3031-3 Evolution and Society. An introduction to the basics of biological evolution and the effect of biological evolution on society. Historical and modern interpretations of biological evolution on the human experience will be developed. This will include legal, political, religious, scientific, racist, sexist, philosophical and educational aspects. Topics will be covered via discussions, presentations, papers and debates. Prerequisite: strongly recommend completion of University Core Curriculum Science requirements.

SOC 3041-3 Families of the World. Surveys uniformity and diversity to family life among the world's societies, and examines the theories concerning family patterns.

SOC 3051-3 History of Crime in England and America. Application of sociological perspective to the study of English and American crime and criminal justice, 1600-present. Examines effects of culture, social structure, and social change on criminal behavior and social control.

SOC 3061-3 Popular Culture in Society. Sociological analysis of the meaning of popular culture, the organization of popular cultural production and the relationship between popular culture and social change.

SPCM 3011-3 Communication Across Cultures. This course provides an introduction to communication between and among people from different cultures, focusing on the application of intercultural communication theory and research. Class assignments and exercises examine everyday encounters with individuals from different races, ethnicity, religions, gender, ages, sexual orientations and physical abilities.

ZOOL 3121-3 Conservation of Natural Resources. This course teaches an ecological perspective on current issues in natural resource conservation and management. Economic, political and social pressures that influence consumptive use of natural resources are considered, along with ecological consequences of resource exploitation. A conservation perspective is developed in which humans are viewed as a participants in, rather than masters of the natural environment.

Multicultural Applied Experience Option

The Multicultural Applied Experience course is a one unit, elective credit intended to enhance the American diversity requirement in the University Core Curriculum and deepen student and faculty involvement in extra-academic service. Students who elect this unit may also wish to sign up for Saluki Volunteers. The Saluki Volunteers can evaluate the Multicultural Applied Experience and those hours may be counted toward the 30 hour minimum per year for participation in the Volunteers. In addition to having their Volunteer hours noted on their transcript, the student will receive an involvement transcript from the Volunteers documenting their activities. This can be added to the resume. For more information about Saluki Volunteers, contact Saluki Volunteers in Student Development.

Multicultural Applied Experience Courses

An applied experience, service-oriented credit in American diversity involving a group different from the student who elects the credit. Difference can be manifested by things such as age, gender, ethnicity, nationality, political affiliation, race or class. Students can sign up for the one credit experience in the same semester they fulfill the multicultural requirement for the University Core Curriculum, or the credit can be coordinated with a particular Core Course on American diversity, although neither is a requirement. Students should consult individual departments for course specifications regarding grading, work requirements, and supervision. A student may take this course only once.

ANTH 298-1 Multicultural Applied Experience. An applied experience, service-oriented credit in American diversity involving a group different from the student's own. Difference can be manifested by age, gender, ethnicity, nationality, political affiliation, race, or class. Students can sign up for the one-credit experience in

the same semester they fulfill the multicultural requirement for the University Core Curriculum or coordinate the credit with a particular Core course on American diversity, although neither is required. Students should consult the department for course specifications regarding grading, work requirements and supervision.

AVM 298-1 Multicultural Applied Experience. An applied experience, service-oriented credit in American diversity involving a group different from the student who elects the credit. Difference can be manifested by things such as age, gender, ethnicity, nationality, political affiliation, race, or class. Students can sign up for the one credit experience in the same semester they fulfill the multicultural requirement for the University Core Curriculum, or the credit can be coordinated with a particular Core Course on American diversity, although neither is a requirement. Students should consult the respective department for course specifications regarding grading, work requirements and supervision. Prerequisite: Approval of the site representative, faculty supervisor and department chair.

ELM 298-1 Multicultural Applied Experience. An applied experience, service-oriented credit in American diversity involving a group different from the student who elects the credit. Difference can be manifested by things such as age, gender, ethnicity, nationality, political affiliation, race, or class. Students can sign up for the one credit experience in the same semester they fulfill the multicultural requirement for the University Core Curriculum, or the credit can be coordinated with a particular Core Course on American diversity, although neither is a requirement. Students should consult the respective department for course specifications regarding grading, work requirements and supervision. Prerequisite: Approval of the site representative, faculty supervisor and department chair.

FN 298-1 Multicultural Food Experience. This course is designed to provide multicultural experience in food selection, eating habits, meal patterns and food preparation. Students will interact with community members of various ethnicity throughout the semester. Shopping and cooking projects will provide firsthand experience. Prerequisite: concurrent or prior registration in one of the following: Anthropology 202, History 210, Philosophy 210, 211 or Sociology 215.

FL 298-1 Multicultural Applied Experience. An applied experience, service-oriented credit in American diversity involving a group different from the student's own. Difference can be manifested by age, gender, ethnicity, nationality, political affiliation, race or class. Students can sign up for the one-credit experience in the same semester they fulfill the multicultural requirement for the University Core Curriculum or coordinate the credit with a particular Core course on American diversity, although neither is required. Students should consult the department for course specifications regarding grading, work requirements and supervision.

HCM 298-1 Multicultural Applied Experience. An applied experience, service-oriented credit in American diversity involving a group different from the student who elects the credit. Difference can be manifested by things such as age, gender, ethnicity, nationality, political affiliation, race or class. Students can sign up for the one credit experience in the same semester they fulfill the multicultural requirement for the University Core Curriculum or the credit can be coordinated with a particular Core course on American diversity, although neither is a requirement. Students should consult the Department of Health Care Professions for course specifications regarding grading, work requirements and supervision. Prerequisite: Health Care Professions major only and junior standing.

LING 298-1 Multicultural Applied Experience. An applied experience, service-oriented credit in American diversity involving a group different from the student's own. Difference can be manifested by age, gender, ethnicity, nationality, political affiliation, race or class. Students can sign up for the one-credit experience in the same semester they fulfill the multicultural requirement for the University Core Curriculum or coordinate the credit with a particular Core course on American diversity, although neither is required. Students should consult the department for course specifications regarding grading, work requirements and supervision.

SOC 298-1 Multicultural Applied Experience. An applied experience, service-oriented credit in American diversity involving a group different from the student's own. Difference can be manifested by age, gender, ethnicity, nationality, political affiliation, race, or class. Students can sign up for the one-credit experience in the same semester they fulfill the multicultural requirement for the University Core Curriculum or coordinate the credit with a particular Core course on American diversity, although neither is required. Students should consult the department for course specifications regarding grading, work requirements and supervision. Graded Pass/Fail only.

Capstone Option

The Capstone Option is for the transfer student who has earned an Associate in Applied Science degree or the equivalent certification and whose needs can be met within one of the participating departments. It is a two-year program that gives maximum credit for previous academic and work experiences in the student's occupational field. The Capstone Option's purpose is to provide an opportunity for students to add to the marketable occupational skills and competencies which they have already acquired.

Key features of the Capstone Option are: (1) it is for selected occupational students who have changed their educational and occupational goals; (2) it is an alternative baccalaureate degree program involving no more than two additional years of col-

lege at a four-year institution; (3) it seeks to recognize similar objectives in both two-year occupational programs and four-year baccalaureate degree programs; (4) it seeks to recognize similar objectives in certain work experiences and in four-year baccalaureate degree programs; and (5) it provides a unique opportunity for developing secondary and post-secondary occupational teachers who possess strong work experience and training in a variety of technical specialties and sub-specialties.

The Capstone Option at Southern Illinois University at Carbondale can lead to the baccalaureate degree in any of the following areas:

College of Agriculture	College of Applied Sciences and Arts
Agribusiness Economics	Advanced Technical Studies
Agriculture, General	Architectural Studies
Animal Science	Aviation Management
Plant and Soil Science	Aviation Technologies
College of Education	Automotive Technology
Clothing and Textile	Dental Hygiene
Workforce Education and Development	Electronics Management
College of Engineering	Fire Science Management
Industrial Technology	Health Care Management
College of Liberal Arts	Mortuary Arts and Science
Paralegal Studies for Legal Assistants	Radiologic Sciences

REQUIREMENTS FOR THE BACCALAUREATE DEGREE THROUGH CAPSTONE

A student completing the degree through the Capstone Option must complete the hour requirements, residence requirements, and average requirements required for all bachelor's degrees. These requirements are explained in Chapter 2. The course requirements for the Capstone Option are explained below.

The following University Core Curriculum requirements must be satisfied:

University Core Curriculum Requirements for Capstone	30
Science	6
Select one course from each group. ¹	
Social Science	6
Select two courses from the approved list. Only one course from history may be selected. ¹	
Humanities	3
Select one course from either group. ¹	
Fine Arts	3
Select one course from the approved list. ¹	
Multicultural: Diversity in the U.S.	3
Select one course from the approved list. ¹	
English Composition	3
English 101 or equivalent with a grade of C or better.	
Speech Communication 101	3
Mathematics	3
Mathematics 110, 113 or any higher level Mathematics course numbered 108 or above with exception of 114.	
Minimum Total	30

¹For explanation of groups or list of approved courses see University Core Curriculum requirements above.

In addition to the University Core Curriculum requirements, the student must complete the requirements specified in a contract to be developed between the student

and the academic unit or department representative. The contract must include two years of work (60 semester hours) after receiving the associate degree or equivalent certification and must list the remaining requirements for the baccalaureate degree.

PROCEDURES FOR APPLYING TO THE CAPSTONE OPTION

In order to qualify for admission to the Capstone Option, the student must:

1. Have made application for admission to Capstone by not later than the end of the first semester in the bachelor's degree program. The student may not have earned more than twelve hours toward the baccalaureate degree program prior to approval for Capstone. A student registered in a program in which Capstone is not available who changes to a program which does participate, must submit the Capstone application by no later than the end of the first semester in the new bachelor's program. The student who has been approved for Capstone in one program, who changes to another program which also participates in Capstone, must receive approval of the new program for continued participation in Capstone by not later than the end of the first semester in the new program and no more than twelve semester hours toward the new baccalaureate program.

2. Have earned an associate degree, or equivalent certification, in a non-baccalaureate-oriented program of 60 semester hours prior to the completion of the first semester in the baccalaureate program at Southern Illinois University at Carbondale. Equivalent certification, for the purposes of Capstone admission, is defined as the formal completion of a technically oriented program of two years duration (60 semester hours), resulting in the receipt of an equivalent associate degree, certificate, diploma, or other documentation as provided by the student's educational institution.

3. Have submitted all documentation of work prior to the associate degree by no later than the end of the second semester or session at the University. This documentation includes all official transcripts from institutions previously attended and may include test reports, evaluation of military experience or whatever other kind of training has been used to award the associate degree.

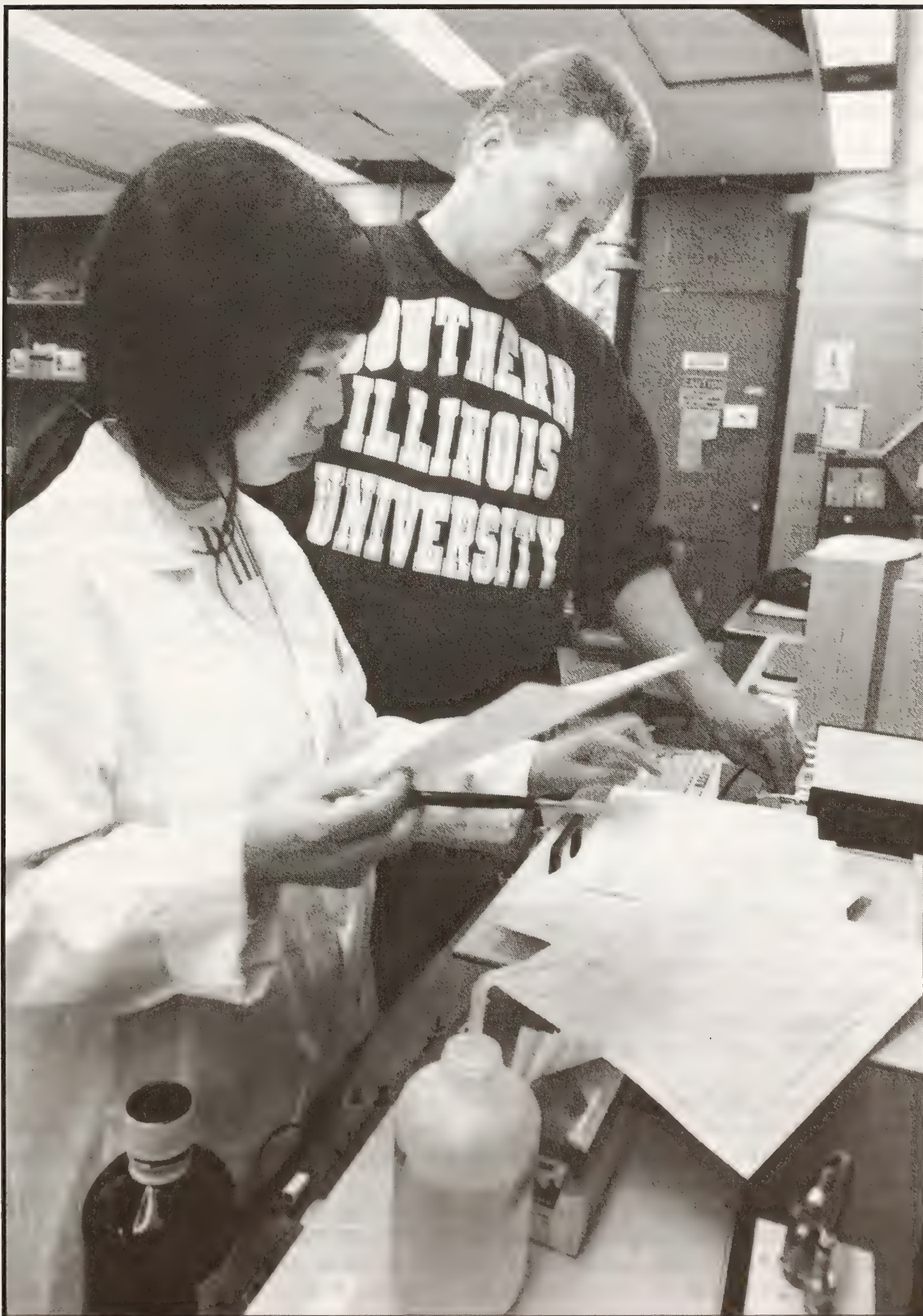
4. Have earned a minimum grade point average of 2.25 (4.0 scale) as calculated by the University grading regulations. The grade point average will be calculated on all accredited work prior to the awarding of the associate degree. An applicant denied admission to Capstone as a result of a low average upon completion of the associate degree may not be considered again after raising the average in subsequent work (credit beyond the associate degree).

5. Have entered a bachelor's degree program at the University which participates in the Capstone Option. The student must not have earned more than 12 semester hours in the baccalaureate major prior to Capstone approval.

6. Have received certification from the academic unit at the University that a bachelor's degree program can be completed within the 60 semester hours of additional work required for the bachelor's degree. The certification will be determined after the Capstone application has been filed.

Copies of the application for admission to the Capstone Option are available in the Office of Admissions and Records.

4 / Undergraduate Curricula and Faculty



College of Agriculture

James M. McGuire, *Dean*

Departments: Agribusiness Economics; Agricultural Education and Mechanization; Animal Science, Food and Nutrition; Forestry; Plant and Soil Science

The College of Agriculture offers the following majors leading to the Bachelor of Science degree.

Agribusiness Economics	Animal Science	Forestry
Agriculture, General	Food and Nutrition	Plant and Soil Science

Students majoring in Agribusiness Economics may choose an Agricultural Resource Management or Applied Economics and Agribusiness option. Students pursuing the General Agriculture major in the Agricultural Education and Mechanization Department may specialize in Agricultural Education, Agricultural Information, Agricultural Mechanization, or Agricultural Production. Production, Science and Pre-Veterinary, and Equine Science specializations are available in the Animal Science major. Food and Nutrition majors may choose Dietetics or Hotel, Restaurant and Travel Administration specializations. In Forestry, one may choose a specialization in Forest Resources Management or in Outdoor Recreation Resources Management. Students in the Plant and Soil Science Department may take a concentration in crops, soils, or horticulture, with a Business, General, or Science specialization within that concentration. In addition, Landscape Horticulture and Environmental Studies specializations are available.

It is recommended that high school students who are planning to pursue one of the above majors include the following in their high school program: four years of English, three years of mathematics (algebra, geometry, advanced mathematics); three years of science (biology, chemistry, physics); three years of social studies; and two years of art, music, vocational education (may include agriculture), or foreign languages. For prospective agriculture majors or food and nutrition majors, high school classes in agriculture or home economics respectively are beneficial but are not specifically required.

For transfer students wishing to pursue a major in one of the agricultural, food and nutrition or forestry areas, courses taken prior to entering the University should include physical and biological sciences, social sciences, and humanities. In addition, a course in speech and appropriate sequences in English composition and college algebra should be included. A potential transfer student who has already identified a major for the bachelor's degree may select with greater precision the courses which will be transferred by consulting the curriculum for that major.

A student planning to take preprofessional courses in veterinary science should register in the College of Agriculture's four-year curriculum in Animal Science (Science and Pre-Veterinary specialization).

Qualified candidates for the Capstone Option are accepted into Agribusiness Economics, Animal Science, the General Agriculture major in Agricultural Education and Mechanization, and Plant and Soil Science. The Capstone Option is described in Chapter 3.

Of the recent graduates of the College of Agriculture, about 45% have been employed in private industry, 10% management and about 15% have been employed in each of: government (federal, state, county, and city); education or extension; graduate study or professional schooling.

Typical employment opportunities for Agribusiness Economics graduates include positions in credit and financial management, professional farm management, sales, and grain merchandising. A graduate from the Agricultural Education and Mechanization Department can be employed in the farm machinery or implement industry,

as a high school agricultural educator, as a news editor, or in agricultural sales or service. Animal Science majors seeking employment can investigate positions in livestock management or sales, and governmental positions such as meat inspectors, as well as veterinary school. Food and Nutrition majors will find numerous opportunities as registered dietitians or in the hotel and restaurant management industry. The major employer of Forestry graduates is the federal or state government, but they also work as private forestry consultants, in urban forestry, or at sawmills. The Plant and Soil Science graduate with a concentration in agronomy will find opportunities in industry such as agricultural chemical sales, in production agriculture, or with a governmental agency such as the Soil Conservation Service. Horticulture graduates can seek employment in nursery management, in the florist or interior plant maintenance industry, or with landscape design firms.

College of Agriculture students come from both rural and urban homes. Almost 40% of the undergraduates and nearly 45% of the graduates are women. Students who elect any one of the six majors in the College of Agriculture are counseled, for the most part, by individual faculty advisers prior to registration. Most faculty offer an open-door policy and much personal attention to their advisees as well as to students enrolled in their classes.

The Agriculture Building houses the offices, classrooms, and laboratories for the agriculture and forestry programs. The Food and Nutrition program has offices, classrooms, and laboratories in Quigley Hall. Other research and teaching facilities include over one-third acre in greenhouses plus 2,000 acres of farm and timberland. A \$1.4 million building and renovation program has resulted in state-of-the-art livestock teaching and research facilities.

Agribusiness Economics (Department, Major, Courses)

The need to better utilize our natural resources and protect our environment, improve our rural infrastructure, and manage the activities of food production, processing, and distribution firms in an international setting is creating career opportunities at a quickening pace. Agribusiness economics offers a flexible program which, under the supervision of a faculty adviser, will allow the student to pursue either a comprehensive or more specialized course of study in preparation to assume an effective professional role in our dynamic, global, economic, and social environment.

Courses in agribusiness economics in the traditional areas of farm management and marketing emphasize accepted techniques to improve efficiency and farm profitability. Course offerings in agribusiness management, finance, sales, marketing, and commodity futures prepare students to assume positions with a broad range of businesses that comprise the agribusiness sector. Course offerings in environmental resource management, rural development, food policy and agricultural law introduce the needed applied economic skills for effective decision making and complement a more specialized course of study.

Within the Agribusiness Economics major there are two options. Both options emphasize a foundation of courses to equip students with professional skills in applied economics and management necessary for solving problems and communication skills necessary for positions of leadership. The agricultural resource management option provides the opportunity to combine the student's training in agribusiness economics with further knowledge about the technical aspects of agriculture and natural resources. This is achieved by developing a concentration of courses from the other units in the College of Agriculture, or by obtaining a minor in Animal Science, Food and Nutrition, Plant and Soil Science or Forestry. This option may appeal to students with an interest in conservation, natural resource management, production agriculture and the industries closely linked to production agriculture. The applied economics and agribusiness option provides the opportunity to combine the student's training in agribusiness economics with knowledge of business, economics or

other related disciplines. This is achieved by developing a concentration of courses from business, economics or other social sciences or by obtaining a minor in one of these disciplines. This option may appeal to a student with an interest in business management, banking and finance, marketing, trade, environmental policy, and rural development. Students planning to pursue an advanced degree in Agribusiness Economics at SIUC or other universities are encouraged to complement either option with additional courses in mathematics, economics, and statistics. For a number of courses taught in the department, there will be an additional charge for field trips, laboratory manuals or supplies.

Bachelor of Science Degree, College of Agriculture

AGRIBUSINESS ECONOMICS MAJOR – AGRICULTURAL RESOURCE MANAGEMENT OPTION

<i>University Core Curriculum Requirements</i>	41 ¹
Plant Biology 115 or 117 or 200 or Zoology 118	
Mathematics 110 or 113	
<i>Requirements for Major in Agribusiness Economics</i>	79
Chemistry 140a and 140b or equivalent	(3) + 5 ^{1,2}
Courses in Agribusiness Economics	28
Agribusiness Economics 204 ¹ , 318, 350 or 360, 351, 362, 381-1, 450 or 461	(3) + 16 ^{1,2}
Other Agribusiness Economics including 6 hours of 400 level courses	12
Courses in Business, Economics, and Quantitative Methods	9
Accounting 220	3
Agricultural Education and Mechanization 318 or 418	3
Economics 241	3
Courses in Communication	6
Speech Communication 221, English 291 or Agricultural Education and Mechanization 314 or communication equivalent 200 level or above	6
Electives	31
Agriculture, Forestry, and related disciplines, excluding Agribusiness Economics	15
<i>Total</i>	120

AGRIBUSINESS ECONOMICS MAJOR – APPLIED ECONOMICS AND AGRIBUSINESS OPTION

<i>University Core Curriculum Requirements</i>	41 ¹
Plant Biology 115 or equivalent, Mathematics 110 or 113 (Mathematics 108 or 139 recommended as a substitute.)	
<i>Requirements for Major in Agribusiness Economics</i>	79
Chemistry 140a	(3) + 1 ^{1,2}
Courses in Agribusiness Economics	28
Agribusiness Economics 204, 318, 350 or 360, 351, 362, 381-1, and 450 or 461	(3) + 16 ^{1,2}
Other Agribusiness Economics including 6 hours of 400 level courses	12
Courses in Business, Economics, and Quantitative Methods	15
Accounting 220 and 230	6
Agricultural Education and Mechanization 318 or 418	3
Economics 240, 241 or 340, 341	6
Courses in Communication	6
Speech Communication 221, English 291, or Agricultural Education and Mechanization 314, or communication equivalent 200 level or above	6

Electives	29	
Agriculture and Forestry electives excluding Agribusiness		
Economics	6	
Business, Economics and related disciplines	9	
Total		120

¹Agribusiness Economics 204 substitutes for Economics 113 and Chemistry 140a-3 substitutes for Chemistry 106.
²Courses in parenthesis are required in the major, but do not add to the hours in the major. They substitute for hours in the University Core Curriculum.

Minor

A minor in agribusiness economics is offered. A minor consists of 15 semester hours of credit. Normally 12 hours must be taken at Southern Illinois University at Carbondale. An adviser within the department must be consulted before selecting this field as a minor.

Agribusiness Economics Faculty

- Beaulieu, Jeffrey**, Associate Professor, Ph.D., Iowa State University, 1984.

Beck, Roger, Associate Professor, Ph.D., Pennsylvania State University, 1977.

Eberle, Phillip, Associate Professor, Ph.D., Iowa State University, 1983.

Harris, Kim, Associate Professor, Ph.D., University of Illinois, 1985.

Herr, William McD., Professor, *Emeritus*, Ph.D., Cornell University, 1954.
- Keeper, Wendell E.**, Professor, *Emeritus*, Ph.D., Cornell University, 1938.

Kraft, Steven E., Professor and *Chair*, Ph.D., Cornell University, 1980.

Rendleman, C. Matthew, Assistant Professor, Ph.D., Purdue University, 1989.

Solverson, Lyle, Associate Professor, Ph.D., University of Wisconsin, 1967.

Wills, Walter J., Professor, *Emeritus*, Ph.D., University of Illinois, 1952.

Agricultural Education and Mechanization (Department, Major [General Agriculture], Courses)

The faculty in the Department of Agricultural Education and Mechanization do teaching, research, and service activities in the area of agricultural education, agricultural information transfer and processing, and in agricultural mechanization. The department offers the general agriculture major with four specializations. The primary objectives of this major are (1) to provide broad, basic academic preparation in agriculture for the specializations of the major, or for the undecided agriculture major, by requiring all students to complete an extensive core of agriculture classes, distributed among four of the departments of the College of Agriculture and (2) to provide the quality academic and professional preparation necessary for success in the several career fields of the four specializations. The following statements identify typical career opportunities for persons completing the respective specialization.

Agricultural Education Specialization. In this program a student receives the technical and professional training for certification as a teacher of applied biological and agricultural occupations in secondary schools, or to be employed in industry.

Agricultural Information Specialization. This specialization is intended for those students who plan to be involved in agricultural education programs in communication, extension, post-secondary educational institutions, and industry.

Agricultural Mechanization Specialization. Agricultural mechanization specialists pursue careers which apply technology to agricultural problems in the areas of power and machinery, structures and environment, electrical power and processing, and surveying for soil and water management.

Agricultural Production Specialization. This specialization provides basic preparation for many careers in general farming and in production-agriculture related positions in agricultural services, agricultural business and agricultural industry.

Qualified candidates for the Capstone Option are accepted in the department.
For a number of courses taught in the department, there will be additional charges for field trips, laboratory manuals, or supplies.

Bachelor of Science Degree, College of Agriculture

GENERAL AGRICULTURE MAJOR – AGRICULTURAL EDUCATION SPECIALIZATION

<i>University Core Curriculum Requirements</i>	41
To include ENGL 101, 102 and 121 or 204; SPCM 101; MATH 110, 113 or approved substitute; HIST 101a or approved substitute; HIST 110; AD 101, HIST 201, MUS 103 or THEA 101; POLS 114; CHEM 106; PLB 115; ANTH 202, HIST 202, 210 or SOC 215; Interdisciplinary Studies elective (humanities area); HED 101 or PE 101.	
<i>Requirements for Major in General Agriculture</i>	71
General Agricultural Core Classes	20
Agribusiness Economics 204	3
Agricultural Education and Mechanization 170, 314, 318	10
Animal Science 121, 122	4
Plant and Soil Science 200	3
Agricultural Education and Mechanization 311a, 311b and Agriculture 323	8
Agriculture or Forestry electives	12
Professional Education Requirements (See College of Education)	28
Psychology 102	3
<i>Electives</i>	8
<i>Total</i>	120

Agricultural Education Suggested Curricular Guide

FIRST YEAR		FALL	SPRING	SECOND YEAR		FALL	SPRING
CHEM 106.....	-		3	Select Core.....	6		4
PLB 115.....	3		-	PSYC 102.....	3		-
Select Core	-		6	POLS 114.....	-		3
ENGL 101, 102.....	3		3	SPCM 101.....	3		-
MATH 108.....	3		-	ABE 204.....	-		3
HED 101/PE 101.....	2		-	AGEM 314.....	3		-
AGEM 170.....	-		4	PLSS 200.....	-		3
ANS 121	3		-	English 121 or 204.....	-		3
ANS 122	1		-				
<i>Total</i>	15		16	<i>Total</i>	15		15
THIRD YEAR		FALL	SPRING	FOURTH YEAR		FALL	SPRING
Non-Western History Core.....	3		-	AG Elective	4		-
AGEM 318.....	3		-	EDUC 316.....	2		-
AG Electives	5		4	EDUC 317.....	2		-
EDUC 308	3		-	AGEM 311b.....	3		-
EDUC 310	2		-	AGRI 323.....	2		-
EDUC 311	-		2	AG Elective	3		-
EDUC 314	-		2	EDUC 401.....	-		12
EDUC 315	-		3				
AGEM 311a.....	-		3				
<i>Total</i>	16		15	<i>Total</i>	16		12

GENERAL AGRICULTURE MAJOR – AGRICULTURAL INFORMATION SPECIALIZATION

<i>University Core Curriculum Requirements</i>	41
To include Chemistry 106, Plant Biology 115, Sociology 108 or Psychology 102.	
<i>Agricultural Information Specialization Requirements</i>	46
General Agricultural Core Classes	20

Agribusiness Economics 204	3
Agricultural Education and Mechanization 170, 314, 318	10
Animal Science 121, 122	4
Plant and Soil Science 200	3
Agribusiness Economics elective	3
Agricultural Education and Mechanization 311a, 418, Agriculture 323	8
Animal Science elective	3
Plant and Soil Science elective	3
Two additional courses, one in speech and one in writing, beyond University Core Curriculum requirements.	6
Agriculture or Forestry electives	3
Electives	33
Total	120

Agricultural Information Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
CHEM 106	-	3	SOC 108 or PSYC 102	3	-
PLB 115	3	-	Select Core	3	3
Select Core	3	6	SPCM 101	3	-
ENGL 101, 102	3	3	ABE 204	3	-
MATH 108	3	-	AGEM 314	-	3
AGEM 170	-	4	PLSS 200	-	3
ANS 121	3	-	Select	3	6
ANS 122	1	-			
Total	16	16	Total	15	15
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
AGEM 318	3	-	AGRI 323	2	-
AGEM 311a	-	3	ANS Elective	-	3
2nd Speech	3	-	AGEM 418	3	-
ABE Elective	-	3	PLSS Elective	-	3
Elective	6	7	Elective	6	8
AG Elective	3	-	Writing Course	3	-
PHSL 201	-	2			
Total	15	15	Total	14	14

GENERAL AGRICULTURE MAJOR – AGRICULTURAL MECHANIZATION SPECIALIZATION

University Core Curriculum Requirements	41
To include Chemistry 106, Plant Biology 115, three hours of Physical Science and Mathematics 108 or higher.	
Agricultural Mechanization Specialization Requirements	43
General Agricultural Core Classes	20
Agribusiness Economics 204	3
Agricultural Education and Mechanization 170, 314, 318	10
Animal Science 121, 122	4
Plant and Soil Science 200	3
Select 14 hours from the following courses: Agricultural Education and Mechanization 371, 372, 373, 374, 384, 402b, 472, 473, 476, 483 ...	14
Plant and Soil Science or Forestry elective	3
Physical Science beyond the University Core Curriculum requirements	3
Agriculture or Forestry elective	3
Electives	36
Total	120

Agricultural Mechanization Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
CHEM 106.....	-	3	Select Core.....	6	6
Select Core	3	2	SPCM 101	-	3
ENGL 101, 102.....	3	3	ABE 204	3	-
AGEM 170.....	-	4	PHYS 203a,b	3	3
ANS 121	3	-	PLSS 200	-	3
ANS 122	1	-	Select Elective	3	-
MATH 108	3	-			
Physical Science	-	3			
<i>Total</i>	13	15	<i>Total</i>	15	15
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
AGEM 372.....	3	-	AGEM 483.....	3	-
AGEM 318.....	3	-	AGEM 476.....	-	3
AGEM 373.....	-	3	Select 400 (Ag Mech)	-	6
AGEM 384.....	3	-	Select (Ag or Other)	12	6
Physics.....	-	3			
AGEM 314.....	3	-			
Select (Agem Mech)	-	3			
PLB 115.....	3	-			
Select Agem or Ag Elective	-	8			
<i>Total</i>	15	17	<i>Total</i>	15	15

GENERAL AGRICULTURE MAJOR – AGRICULTURAL PRODUCTION SPECIALIZATION

<i>University Core Curriculum Requirements</i>	41
To include Zoology 118, Mathematics 108 or higher and a substitute of three hours of Chemistry 140a.	
<i>Agricultural Production Specialization Requirements</i>	50
General Agricultural Core Classes	20
Agribusiness Economics 204	3
Agricultural Education and Mechanization 170, 314, 318	10
Animal Science 121, 122	4
Plant and Soil Science 200	3
Plant Biology 200	4
Chemistry 140a and 140b	(3) + 5 ¹
Zoology 118	(3) + 1 ¹
Select 18 hours with 6 semester hours in each of three of the four following areas	18
A. Agribusiness Economics including either 350 or 351	6
B. Agricultural Education and Mechanization including 372 or 384	6
C. Animal Science 315 or 331 plus one production course	6
D. Plant and Soil Science 240 plus one production course	6
Agriculture or Forestry electives	2
<i>Electives</i>	29
<i>Total</i>	120

¹Hours in parenthesis substitute into the University Core Curriculum.

Agricultural Production Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
ZOOL 118	4	-	Select Core	5	6
Select Core	-	6	SPCM 101	-	3
ENGL 101, 102	3	3	ABE 204	-	3
AGEM 170	-	4	AGEM 372	-	3
ANS 121	3	-	CHEM 140b	4	-
ANS 122	1	-	PLB 200	4	-
MATH 108	3	-	PLSS 200	3	-
CHEM 140a	-	4			
Total	14	17	Total	16	15
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
ABE 350 or 351	3	-	Select Ag or Other	3	7
ANS 315 or 331 or PLSS 240	-	3-4	AGEM 476	-	3
AGEM 318	3	-	AGEM 483	3	-
AGEM 314	3	-	ABE Elective	3	3
Select Core	3	-	ANS Elective	3	-
AG Elective	-	6	PLSS Elective	3	-
AGEM Elective	-	3	AGEM Elective	3	-
Elective (ABE, ANS or PLSS)	3	3			
Total	15	15-16	Total	15	13

Minor

A minor in General Agriculture is offered. A minor consists of 15 semester hours of credit. Normally 12 hours must be taken at Southern Illinois University at Carbondale. An adviser within the department must be consulted before selecting this field as a minor.

Agriculture Education and Mechanization Faculty

- Ilitis, Robert N.**, Lecturer, MS., Southern Illinois University at Carbondale, 1994.

Legacy, James, Professor, Ph.D., Cornell University, 1976.

Steffen, Richard W., Assistant Professor, Ph.D., Iowa State University, 1993.
- Stitt, Thomas R.**, Professor, Ph.D., Ohio State University, 1967.

Wolff, Robert L., Professor and *Chair*, Ph.D., Louisiana State University, 1971.

Animal Science (Major, Courses)

The animal science program is a part of the Department of Animal Science, Food and Nutrition. SIUC's internationally known animal science faculty is dedicated to teaching and to student development. Animal Science teachers at SIUC represent the range of topics in animal agriculture. There are specialists in animal genetics, reproductive physiology, nutrition and management for each of the species, international food programs, and veterinary medicine. The animal science teachers bring their exciting experience with them into every class they teach. The combination of the visionary and the practical makes a strong and vital faculty for students who want the best professional education they can get.

The department offers three specializations leading to a B.S. degree: production, equine science, and science and pre-veterinary medicine. The latter allows qualified students to transfer to accredited colleges of veterinary medicine prior to receiving the Bachelor of Science degree in Animal Science.

Most of the students' agriculture courses for the major will be in animal science, but students can also select courses from agronomy, horticulture, forestry, agricultural education, microcomputers in agriculture, agricultural mechanization, agribusiness and economics, and farm management. Other classes help the student meet basic University requirements in a way that will strengthen their abilities to think,

understand, and communicate about the social, physical and natural sciences important to animal scientists. Other departments offer supplemental coursework in physiology, genetics, nutrition, animal behavior, and other topics that many animal science students find valuable.

The animal science major is backed up with extensive facilities for several species of livestock, and every student has the opportunity to get involved in work, research, or observation at the University Farm. The core of our animal science program is the 2,000 acre farm system, which includes special centers for beef, dairy, horses, and swine.

Hundreds of distinct occupations exist within the animal agriculture field. There are opportunities in animal production work at farm operations, ranches, feedlots, stables and zoos. There are opportunities in feed and meat-packing industries, equipment suppliers, government and international agencies, veterinary medicine, and numerous other supporting industries that serve producers. Within each of these areas, animal science graduates are employed in such jobs as sales, service, education, communication, finance and business management.

There may be extra expenses for field trips, manuals or supplies in some courses.

Bachelor of Science Degree, College of Agriculture

<i>University Core Curriculum Requirements</i>	41
Science: See requirements of the specialization	
Mathematics: See requirements of the specialization	
<i>Requirements for Major in Animal Science</i>	79
Core Requirements	33
Animal Science 121, 122, 210, 215, 315, 331, 332, plus one	
course from 409, 430, 465, or 485	23
Agribusiness Economics 204	(3) ¹
Agriculture electives, excluding Animal Science	5
Microbiology 201	4
Physiology 208	1
Specialization Requirements	46
Fulfill the requirements of one of the following specializations:	
<i>Total</i>	120

PRODUCTION SPECIALIZATION

Substitute Chemistry 140a,b for Chemistry 106	(3) ¹ + 5
Substitute Zoology 118 or Plant Biology 200 for Zoology 115	(3) ¹ + 1
Substitute any higher level Mathematics course number 108 or above	
with exception of Mathematics 114	(3) ¹
Animal Science 381 plus Animal Science electives including one	
additional 400-level course	7-9
Electives	31-33
<i>Total</i>	46

EQUINE SCIENCE SPECIALIZATION

Substitute Chemistry 140a,b for Chemistry 106	(3) ¹ + 5
Substitute Zoology 118 or Plant Biology 200 for Zoology 115	(3) ¹ + 1
Substitute any higher level Mathematics course number 108 or above	
with the exception of Mathematics 114	(3) ¹
Agribusiness Economics 350	3
Animal Science 219, 409, 419, 431, 490 and a minimum of 4 credit	
hours in 112, 212, 312, or 412	29
Electives	2-8
<i>Total</i>	46

SCIENCE AND PRE-VETERINARY SPECIALIZATION

Substitute Chemistry 200 for Chemistry 106	(3) ¹
Substitute Zoology 118 for Zoology 115	(3) ¹ + 1
Chemistry 201, 210, 211, 340, 341, 350.....	14
Physics 203a,b and 253a,b	8
Mathematics 108 and 109	(3) ¹ + 3
Animal Science 381 plus Animal Science electives including one additional 400-level course	7
Electives	13
Total	46

¹The numbers in parenthesis are counted as part of the 41 hour University Core Curriculum requirements.

Minor in Animal Science

The minor in animal science requires 16 semester hours, of which at least 12 must be earned at Southern Illinois University at Carbondale. An adviser within the department must be consulted before selecting this field as a minor.

Minor in Equine Studies

The minor in equine studies requires 16 semester hours, of which at least 12 must be earned at Southern Illinois University at Carbondale. Courses required are 215, 219, 315, 409, and 331 or Physiology 310, with additional hours to reach the 16 hour total selected from 319, 419, 431 or other courses in equine studies not to exceed 2 credit hours from equitation (112, 212, 312, or 412). The minor in Equine Studies is not awarded to students who have a major in Animal Science.

Animal Science Faculty

Arthur, Robert D., Professor Ph.D., University of Missouri, 1970.
Carnevale, Elaine M., Assistant Professor, D.V.M., Colorado State University, 1985, Ph.D., University of Wisconsin, 1994.
Dado, Richard G., Assistant Professor, Ph.D., Michigan State University, 1994.
Goodman, Bill L., Professor, *Emeritus*, Ph.D., Ohio State University, 1959.
Hausler, Carl L., Associate Professor, Ph.D., Purdue University, 1970.
Hinners, Scott W., Professor, *Emeritus*, Ph.D., University of Illinois, 1958.
Kammlade, W. G., Jr., Associate Professor, *Emeritus*, Ph.D., University of Illinois, 1951.

King, Sheryl S., Professor, Ph.D., University of California at Davis, 1984.
Kroening, Gilbert H., Professor and *Chair*, Ph.D., Cornell University, 1965.
Olson, Howard H., Professor, *Emeritus*, Ph.D., University of Minnesota, 1952.
Strack, Louis E., Associate Professor, *Emeritus*, D.V.M., University of Illinois, 1961.
Winters, Todd A., Assistant Professor, Ph.D., University of Wisconsin, 1992.
Woody, H. Dee., Associate Professor, Ph.D., Michigan State University, 1978.
Young, Anthony W., Professor, Ph.D., University of Kentucky, 1969.

Food and Nutrition (Major, Courses)

The food and nutrition program is a part of the Department of Animal Science, Food and Nutrition.

Students will be required to take field trips in those courses so designated with the expenses pro-rated for each student. Appropriate uniforms will be required of all students enrolling in those courses that involve preparation of food.

Bachelor of Science Degree, College of Agriculture

FOOD AND NUTRITION MAJOR – DIETETICS SPECIALIZATION

These courses give a strong scientific education to those interested in becoming dietitians in hospitals, college dormitories, industrial plants, health clinics, laboratories, or

public health and welfare organizations. They meet the American Dietetics Association Standards of Education for Plan V. Eligibility to write the registration examination to become a registered dietitian (RD) requires completion of academic and experiential requirements.

<i>University Core Curriculum Requirements</i>	41 ¹
<i>Requirement for Major in Food and Nutrition with Specialization in Dietetics</i>	71-76
Anthropology 104 or Sociology 108	(3)
Plant Biology 301i	(3)
Psychology 102, 323	6
Economics 113	(3)
Any Mathematics prefix course with the exception of 107, 114	(3)
Zoology 115 or 118	(3) + 1
Chemistry 140a, b	(3) + 5
Physiology 301, 310 or Allied Health Careers 141	4-9
Microbiology 301	4
Management 304	3
Educational Psychology 402 or Agribusiness Economics 318	3
Computer Science 212 or Information Management Systems 229	3
Food and Nutrition 100, 206, 215, 256, 320, 321, 360, 363, 373, 410, 425, 470, 472, 480, 490	42
<i>Electives</i>	3-8
<i>Total</i>	120

¹The numbers in parentheses are counted as part of the 41-hour University Core Curriculum Requirement.

FOOD AND NUTRITION MAJOR – HOTEL, RESTAURANT AND TRAVEL ADMINISTRATION SPECIALIZATION

The Hotel, Restaurant and Travel Administration Specialization offers an undergraduate program as preparation for careers in hospitality management. The mission is to provide education and service activities with the goal of enabling students, professionals and the community to function in a changing global society. The specialization integrates other disciplines and addresses ongoing concerns and needs of the hospitality industry in its diverse environments. It is broad in scope and content. The specialization provides for theory development, experimentation and practice that fosters personal, social and intellectual pursuits for the enhancement of life-long learning.

<i>University Core Curriculum Requirements</i>	41 ¹
<i>Requirements for Major in Food and Nutrition with Specialization in Hotel, Restaurant and Travel Administration</i>	69
Psychology 102	(3)
Economics 113	(3)
Food and Nutrition 101	(2)
Any Mathematics prefix course with the exception of 107, 114 and 282	(3)
Accounting 220	3
Management 304	3
Marketing 304	3
Finance 270 or 280	3
Geography 103	3
Information Management Systems 229 or Computer Science 212	3
Educational Psychology 402 or Agribusiness Economics 318 or Mathematics 282	3
Psychology 322 or 323	3

Food and Nutrition 156, 202, 206, 302, 335, 360, 361 or Marketing 305, 363, 371, 372, 373, 435, 460, 461, 473,	44
Approved Electives	10 ²
Total	120

¹The numbers in parentheses are counted as part of the 41-hour University Core Curriculum Requirement.
²Students must complete 10 hours of electives in areas pertinent to the HRTA specialization.

Food and Nutrition Faculty

- Anderson, Sara Long, Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1991.
- Ashraf, Hea-Ran L., Associate Professor, Ph.D., Iowa State University, 1979.
- Banz, William J., Assistant Professor, Ph.D., University of Tennessee, 1995.
- Boushey, Carol J., Assistant Professor, Ph.D., University of Washington, 1995.
- Corker, John W., Visiting Assistant Professor, M.B.A., Michigan State University, 1964.
- Endres, Jeannette M., Professor, Ph.D., St. Louis University, 1972.
- Girard, T.C., Assistant Professor, M.S., University of Wisconsin, 1992.
- Harper, Jenny M., Professor, Emerita, Ph.D., Cornell University, 1941.
- Konishi, Frank, Professor, Emeritus, Ph.D., Cornell University, 1958.
- Kroening, Gilbert H., Professor and Chair, Ph.D., Cornell University, 1965.
- Payne, Irene R., Professor, Emerita, Ph.D., Cornell University, 1960.
- Welch, Patricia, Professor, Ph.D., Southern Illinois University, 1982.

Forestry (Department, Major, Courses)

Two specializations are offered within the major in forestry: forest resources management and outdoor recreation resources management. University Core Curriculum requirements and a core of professional courses are similar for most specializations. Courses specifically required in the various specializations may not be taken for pass/fail credit by students majoring in the Department of Forestry. The forest resources management and outdoor recreation resources management specializations are accredited by the Society of American Foresters.

Available to the Department of Forestry for teaching and research in addition to resources present on campus are the following: the Crab Orchard National Wildlife Refuge; the Shawnee National Forest; a number of state parks and state forests; conservation areas and federal reservoirs. Collectively, these comprise more than a million acres of forest land, all in the vicinity of the University. Also accessible for forest products utilization teaching and research is a wood products plant located near the campus. Scientists with the U.S. Forest Service are affiliated with the Department of Forestry, and participate in the educational activities of the department.

The curricula of the Department of Forestry prepare graduates for employment with local, state and federal natural resource agencies, as well as private industry. In addition, many graduates continue their education in advanced masters and doctoral programs. Federal agencies employing our graduates include the Forest Service, Soil Conservation Service, Fish and Wildlife Service, National Park Service, Bureau of Reclamation, Bureau of Land Management, Environmental Protection Agency, Tennessee Valley Authority, and the Army Corps of Engineers. There are also employment opportunities in state government with agencies such as fish and game commissions, departments of natural resources and conservation, and forest services. At the local level, there are opportunities with urban forest and park systems. Private agencies have included Ducks Unlimited, the Nature Conservancy, the National Audubon Society and the American Forestry Association. Forestry graduates often are employed by private forestry consulting firms and by private industries such as Scott Paper Co., Weyerhaeuser Co., International Paper Co., Georgia Pacific Corporation and Westvaco.

Bachelor of Science Degree, College of Agriculture**FORESTRY MAJOR – FOREST RESOURCES MANAGEMENT SPECIALIZATION**

The program in forest resources management includes instruction leading to careers in forest management and production, multiple-use resource management, and the forest products industries. The goal of the Forest Resources Management specialization is to develop individuals with sufficient understanding of the physical, biological and economic considerations required to make sound management decisions for the multiple uses of forest resources. The specialization includes areas of study recommended and accredited by the Society of American Foresters. Emphasis is upon integrated resource management of natural and renewable resources, coordinating forest utilization methods and conservation practices, and preserving our wildlands heritage. A five-week summer camp is required after the junior year to give the student practical field experience. Field study costs per student for off-campus living expenses and transportation are approximately \$150 per student and must be borne by the student. Other costs for equipment and supplies which are required for field study and certain other courses are specified in course descriptions.

<i>University Core Curriculum Requirements</i>	41
<i>Requirements for Major in Forestry with Forest Resources Management Specialization</i>	89
Forestry Core: 200, 201, 202a, 202b, 301, 310, 311, 314, 315, 331, 351, 381, 409, 410, 411	38
Biology 307; Plant Biology 200; Chemistry 140a,b	(6) ¹ + 9
Agribusiness Economics 204 or Economics 240	(3) ¹
English 101, 102, Speech Communication 101, Mathematics 110 or 140, Mathematics 282 or Plant Biology 360 or Agribusiness Economics 318	(12) ¹ + 3
Five-week early summer field studies: Forestry 310c, 314c, 320c, 351c, 360c	7
Forestry 416	3
Plant and Soil Science 240	4
Courses selected from: Forestry 313, 320, 350, 402, 403, 405, 408, 412, 414, 418, 420, 430, 431, 451, 454, 460, Zoology 118, 468, 469	19
Restricted electives	6
Total	130

¹Hours included in total for University Core Curriculum requirements.

Forest Resources Management Suggested Curricular Guide¹

FIRST YEAR		FALL	SPRING	SECOND YEAR		FALL	SPRING
CHEM 140a,b	4	4		FOR 201	3		-
PLB 200	4	-		FOR 202a,b	1		1
MATH 110 or 140	-	3		FOR 331	-		3
ENGL 101,102	3	3		PLSS 240	4		-
FOR 200	1	-		MATH 282, PLB 360 or ABE 318	-		3
Univ Core	3	5		Univ Core	6		3
				SPCM 101	-		3
Total	15	15		Total	14		16
THIRD YEAR		FALL	SPRING	FOURTH YEAR		FALL	SPRING
FOR 311	3	-		FOR 411	3		-
FOR 310	-	4		FOR 381	-		1
FOR 410	3	-		FOR 416	3		-
FOR 315	-	3		FOR 409	-		3
Elective	6-8	3-4		Elective	-		6-8
FOR 351	-	3		Selected Univ Core	3		3
FOR 301,314	3	3		Restricted Elective	4		3-4
Total	15-17	16-17		Total	16-17		16-19

¹ Also includes a five-week summer field study for seven hours. Courses included are: Forestry 310c, 314c, 320c, 351c.

FORESTRY MAJOR – OUTDOOR RECREATION RESOURCES MANAGEMENT SPECIALIZATION

The program in outdoor recreation resources management provides interdisciplinary training for management of the nation’s outdoor recreation heritage. The courses offered are among those recommended by the National Recreation and Park Association and the Society of American Foresters. The goal of the Outdoor Recreation Resources Management option is to prepare students for entry into professional careers in managing and administering wildlands for outdoor recreation and park uses in a variety of agencies operating programs in diverse geographic and natural settings. The outdoor recreation resource management student travels through selected sections of the United States on a park and recreation field studies session of outdoor recreation and park facilities. The summer camp requires the student pay transportation and living expenses. Other courses in this program may also require additional fees.

University Core Curriculum Requirements	41
Requirements for Major in Forestry with Outdoor Recreation Resources Management Specialization	89
Forestry Core: 200, 201, 202a, 202b, 301, 310, 311, 314, 315, 331, 351, 381, 409, 410, 411	38
Plant Biology 200, Chemistry 140a,b	(6) ¹ + 6
Agribusiness Economics 204 or Economics 240	(3) ¹
English 101, 102, Speech Communication 101, Mathematics 110 or 140, Mathematics 282 or Plant Biology 360 or Agribusiness Economics 318	(12) ¹ + 3
Plant and Soil Science 240, 328a,b, Geography 310	11
Forestry 422c (Park and Wildlands Management Camp)	4
Forestry 320, 420, 421, 423, 470	13
Select at least five hours from Forestry 405, 416, 430, Zoology 468 or 469	5-6
Restricted Electives	4-5
Total	130

¹Hours included in total for University Core Curriculum requirements.

Forestry Outdoor Recreation Suggested Curricular Guide¹

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
CHEM 140a,b	4	4	FOR 201	4	-
PLB 200	4	-	FOR 202a,b	1	1
MATH 110 or 140	-	3	FOR 331	-	3
ENGL 101,102	3	3	PLSS 240	4	-
FOR 200	1	-	MATH 282 or PLB 360 or ABE 318	-	3
Univ Core	3	5	Univ Core	6	3
			GEOG 310	-	3
			SPCM 101	-	3
Total	15	15	Total	15	16

THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
FOR 311.....	3	-	FOR 411.....	3	-
FOR 310.....	-	4	FOR 381.....	-	1
FOR 410.....	3	-	FOR 420, 421.....	3	3
FOR 315.....	-	3	FOR 409.....	-	3
PLSS 328a,b.....	4	-	FOR 405, 416, 430, ZOOL 468 or 469.....	5-6	-
FOR 351.....	-	3	FOR 423.....	-	3
FOR 314.....	-	3	FOR 470.....	-	2
FOR 301.....	3	-	Univ Core.....	3-4	-
FOR 320.....	-	2	Restricted Elective.....	3	4-5
Univ Core.....	3	-	<i>Total</i>	17-18	16-17
<i>Total</i>	16	15			

¹ Also includes a five-week summer field study for four hours (Forestry 422c for 4 semester hours).

Forestry Faculty

Aubertin, Gerald M., Associate Professor, Ph.D., Pennsylvania State University, 1964.

Brown, Gregory G., Assistant Professor, Ph.D., University of Idaho, 1992.

Budelsky, Carl A., Assistant Professor, Ph.D., University of Arizona, 1969.

Burde, John H., III, Professor, Ph.D., University of Arizona, 1975.

Chen, Peter Y.S., Adjunct Assistant Professor, Ph.D., University of Minnesota, 1968.

Chilman, Kenneth C., Associate Professor, *Emeritus*, Ph.D., University of Michigan, 1972.

Fralish, James S., Associate Professor, *Emeritus*, Ph.D., University of Wisconsin, 1970.

Kung, Fan H., Professor, Ph.D., Michigan State University, 1968.

Mangun, Jean, Assistant Professor, Ph.D., Purdue University, 1991.

McCurdy, Dwight R., Professor and *Chair*, Ph.D., Ohio State University, 1964.

Myers, Charles C., Associate Professor, *Emeritus*, Ph.D., Purdue University, 1966.

Phelps, John, Professor, Ph.D., University of Missouri, 1980.

Rink, George, Adjunct Assistant Professor, Ph.D., University of Tennessee, 1974.

Roth, Paul L., Professor, Ph.D., Kansas State University, 1968.

Stokke, Douglas D., Adjunct Assistant Professor, Ph.D., Iowa State University, 1986.

Unger, Daniel R., Assistant Professor, Ph.D., University of Idaho, 1995.

Van Sambeek, Jerome W., Adjunct Assistant Professor, Ph.D., Washington University, 1975.

Plant and Soil Science (Department, Major, Courses)

The Department of Plant and Soil Science includes crop production, horticulture, and soils. There are many widely varied opportunities for students with an interest in plants or soils. Students may choose a general option within the department and select most of their upper division credits from a wide choice of electives throughout the College of Agriculture and the University. If interests are more specialized, students may elect the science option and specialize in one particular area, or may elect a specialization which will combine a broad background in plants and soils with selected business courses and business related electives. A specialization in environmental studies would familiarize the student with environmental problems relating to plants and soils.

Students selecting the landscape horticulture specialization can prepare for interesting careers in landscaping or gardening in parks, playgrounds, residential or industrial areas, road and street parkway improvement and maintenance, and in other public and private work to make the environment more pleasing and useful.

Opportunities for individual program development within the various options may be realized through work experience, internships, special studies, and seminars; however, no more than 30 hours of such unstructured coursework may be counted toward the degree. Students in all specializations are urged to make use of them to meet the goals and needs of their respective programs.

Students in all specializations must complete the plant and soil science core. These courses are Plant and Soil Science 200, 220, 240, one hour of 381, and Agricultural Education and Mechanization 318 or 418 or an acceptable substitute.

There may be extra expenses for field trips, manuals, or supplies in some courses.

	SPECIALIZATIONS		
Bachelor of Science Degree, College of Agriculture	General	Science	Business
University Core Curriculum Requirements	43 ⁴	43 ⁴	43 ⁴
Foundation Skills			
English 101 and 102	6	6	6
Mathematics 113.....	3	—	3
Mathematics 108 ¹	—	3	—
Speech Communication 101.....	3	3	3
Disciplinary Studies			
Fine Arts	3	3	3
Human Health.....	2	2	2
Humanities.....	6	6	6
Science - 6 ⁴			
Chemistry 140a substituted for Chemistry 106	4	—	4
Chemistry 200 and 201 substituted for Chemistry 106	—	4	—
Plant Biology 200 substituted for Plant Biology 115	4	4	4
Social Science - 6			
Agribusiness Economics 204 substitute for 1 Social Science requirement.....	3	3	3
Psychology 102	—	—	3
Anthropology 104, Geography 103, History 110, 112, Political Science 114, Psychology 102 or Sociology 108	3	3	—
Integrative Studies			
Multicultural: Diversity in the U.S.....	3	3	3
Interdisciplinary	3	3	3
Requirements for Major in Plant and Soil Science	58	73	69
Course in one other department other than Agricultural			
Education and Mechanization or Plant and Soil Science.....	3	3	3
Agricultural Education and Mechanization 318 (or approved substitute).....	3	3	3
Physics 203a ² and b (or approved substitute)	—	6	—
Plant Biology 320.....	4	4	4
Chemistry 140b.....	4	—	4
Chemistry 210, 211, 340, 341, 350.....	—	13	—
Mathematics 109, 140.....	—	7	—
Plant and Soil Science 200, 220, 240, 381-1	11	11	11
Other Plant and Soil Science courses at 300- and 400- level ³	21	21	21
Other Agriculture electives.....	12	5	7
Accounting 210, Management 301 or 304, Marketing 304			
or Agribusiness Economics 360, Agribusiness Economics 333 or Agriculture 323	—	—	11-12
Business electives and supporting courses.....	—	—	4-5

Electives	19	4	8
Total	120	120	120

¹Mathematics 111 may be substituted.²Physics 205a may be substituted.³Plant and Soil Science electives must include 18 hours of structured coursework at the 300- or 400-level, with no less than 12 hours at the 400-level.⁴The University Core Curriculum requires 41 hours of courses. Chemistry and Plant Biology are 4 hour courses, but only 3 hours count toward core curriculum requirements.**Plant and Soil Science, General Specialization Suggested Curricular Guide**

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
CHEM 140a.....	4	-	Multicultural.....	3	-
PLB 200.....	-	4	Humanities.....	3	3
ABE 204.....	-	3	Agriculture Elective.....	-	3
Computer Requirement.....	3	-	PLSS 200.....	-	3
Fine Arts.....	3	-	MATH 113.....	3	-
Social Science.....	-	3	SPCM 101.....	-	3
ENGL 101,102.....	3	3	PLSS 220.....	3	-
Human Health.....	2	-	PLSS 240.....	-	4
Interdisciplinary.....	-	3	CHEM 140b.....	4	-
Total	15	16	Total	16	16
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
PLB 320.....	4	-	PLSS 381.....	1	-
Agriculture Elective.....	3	6	PLSS Upper Level Course.....	3	6
PLSS Upper Level Courses.....	6	6	Open Electives.....	10	9
AG Elective (no PLSS or AGEM).....	-	3	Total	14	15
Total	13	15			

Plant and Soil Science, Science Specialization Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
PLB 200.....	-	4	PHYS 203a,b.....	3	3
CHEM 200, 201.....	4	-	CHEM 210, 211.....	-	4
CHEM 340, 341.....	-	5	PLSS 200, 220.....	6	-
ENGL 101, 102.....	3	3	PLSS 240.....	-	4
MATH 108, 109.....	3	3	ABE 204.....	3	-
Computer Requirement.....	3	-	MATH 140.....	-	4
Fine Arts.....	3	-	SPCM 101.....	3	-
Total	16	15	Total	15	15
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
PLB 320.....	4	-	PLSS 381.....	1	-
CHEM 350.....	-	4	Upper Level Courses.....	6	9
Agriculture Elective.....	3	2	Social Science.....	-	3
PLSS Upper Level Courses.....	3	3	Humanities.....	3	3
Human Health.....	2	-	Open Electives.....	4	-
Multicultural.....	3	-	Total	14	15
Interdisciplinary.....	-	3			
Agricultural Elective(no PLSS or AGEM).....	-	3			
Total	15	15			

Plant and Soil Science, Business Specialization Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
CHEM 140a.....	4	-	Multicultural.....	3	-
PLB 200.....	-	4	Interdisciplinary.....	-	3
ABE 204.....	-	3	Fine Arts.....	-	3
Computer Requirement.....	3	-	MATH 113.....	3	-
PSYC 102.....	3	-	SPCM 101.....	-	3
Humanities.....	-	6	Required Business Course.....	3	-
ENGL 101, 102.....	3	3	PLSS 200, 220.....	3	3
Human Health.....	2	-	PLSS 240.....	-	4
Total	15	16	CHEM 140b.....	4	-
			Total	16	16

THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
PLB 320	4	-	PLSS 381	-	1
Required Business Courses	3	2	PLSS Upper Level Courses	6	6
Agriculture Elective	4	3	Required Business Course	-	3
PLSS Upper Level Courses	3	6	Elective Business Courses	4	-
Agricultural Elective (no PLSS or AGEM).....	-	3	Electives	4	4
Total.....	14	15	Total	14	14

Bachelor of Science Degree, College of Agriculture	SPECIALIZATIONS	
	Environmental Studies	Landscape Horticulture
University Core Curriculum Requirements	43 ³	43 ³
Foundation Skills		
English 101 and 102	6	6
Mathematics 113	3	-
Mathematics 108 ¹ substituted for 110 or 113	-	3
Speech Communication 101	3	3
Disciplinary Studies		
Fine Arts	3	3
Human Health	2	2
Humanities	6	6
Science ³		
Chemistry 140a substituted for Chemistry 106	4	-
Chemistry 200 and 201 substituted for Chemistry 106	-	4
Plant Biology 200 substituted for Plant Biol- ogy 115	4	4
Social Science		
Agribusiness Economics 204 substitute for 1 Social Science requirement	3	3
Anthropology 104, Geography 103, History 110, 112, Political Science 114, Psychology 102 or Sociology 108	3	3
Integrative Studies		
Multicultural: Diversity in the U.S.	3	3
Interdisciplinary	3	3
Requirements for Major in Plant and Soil Science	67-68	72-74
Biology 307	3	3
Plant Biology 320 and 356	8	8
Chemistry 140b	4	-
Chemistry 210, 211, 340, 341 and 350	-	12-13
Agricultural Education and Mechanization 371, 374	4	-
Agricultural Education and Mechanization 318	3	3
Zoology 316	3	3
Agriculture 333	-	2
Agribusiness Economics 401	-	3
Geography 471 and 434 or Civil Engineering 310	-	7
Political Science 445 or Geography 320 ² or 426	-	3-4
Mathematics 109 ¹ and 140	-	7
Plant and Soil Science 200, 220, 240, 381-1, 420,		

447, 468	—	21	
Plant and Soil Science 200, 220, 240, 322, 327, 328a,b, 381-1, 428, 429, 432 or 434	30-31	—	
Agriculture electives	12	—	
<i>Electives</i>		9-10	3-5
Must be selected from Plant and Soil Science 305, 322, 325, 423, 430, 432, 436, 437, 441, 445, 446, 448 or 454			
<i>Total</i>		120	120

¹Mathematics 111 may be substituted.²Requires permission from Plant and Soil Science chair.³The University Core Curriculum requires 41 hours of courses. Chemistry and Plant Biology are 4 hour courses, but only 3 hours count toward University Core Curriculum requirements.

Landscape Horticulture Specialization Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
CHEM 140a.....	4	-	PLSS 220	3	-
PLB 200.....	-	4	PLSS 240	-	4
ABE 204.....	-	3	PLSS 200.....	-	3
Computer Requirement	3	-	AGEM 371.....	2	-
Social Science.....	3	-	AGEM 374.....	2	-
MATH 113	-	3	CHEM 140b.....	4	-
Human Health	2	-	SPCM 101.....	-	3
Multicultural	-	3	Fine Arts.....	-	3
ENGL 101, 102.....	3	3	Humanities	3	3
<i>Total</i>	15	16	<i>Total</i>	14	16
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
PLB 320.....	-	4	PLSS 428	3	-
PLB 356.....	-	4	PLSS 429	-	3
PLSS 328a,b.....	4	-	PLSS 381	1	-
PLSS 327	3	-	BIOL 307.....	-	3
ZOOL 316	3	-	Interdisciplinary	-	3
PLSS 432.....	-	3	PLSS Electives (400-Level)	4	-
PLSS 322.....	3	-	Agriculture Elective	6	6
PLSS Electives	3	3			
<i>Total</i>	16	14	<i>Total</i>	14	15

Environmental Studies Specialization Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
PLB 200.....	4	-	Multicultural.....	-	3
CHEM 200, 201.....	4	-	Humanities	3	-
CHEM 340, 341.....	-	5	CHEM 210, 211.....	4	-
ABE 204.....	-	3	MATH 108, 109.....	3	3
Computer Requirement	3	-	SPCM 101.....	-	3
BIOL 307	-	3	PLSS 200.....	3	-
ENGL 101, 102.....	3	3	AGRI 333.....	-	2
Human Health	2	-	PLSS 240	-	4
			PLSS 220	3	-
<i>Total</i>	16	14	<i>Total</i>	16	15
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
PLB 320.....	4	-	PLSS 420	4	-
PLB 356.....	-	4	PLSS 468	-	3
ABE 401	4	-	PLSS 447	-	3
MATH 140	4	-	PLSS 381	1	-
CHEM 350.....	-	4	CE 310.....	-	3
GEOL 426.....	-	4	ZOOL 316.....	3	-
Fine Arts.....	3	-	Major Course	-	3
Humanities	-	3	Social Science	3	-
			GEOG 471	-	3
<i>Total</i>	15	15	Interdisciplinary	3	-
			<i>Total</i>	14	15

Minor

A minor in plant and soil science is also available to those interested in field crop production, horticulture, or soils. A total of 16 hours of credit is required with at least 12 hours taken at the University. One course may be selected from 200, 220, or 240; and at least eight hours from 300- or 400-level structured courses. The chair should be consulted for assistance in selecting this field as a minor.

Certification

Professional standards are needed for those whose activities affect the well-being of the general public. Such standards have been in use in medicine, law, engineering, etc. for many years. A certification program that identifies professionals for educational, scientific and service activities with public and private agencies is in the public interest. Certification assures that a student meeting these requirements is highly qualified in their discipline. It is becoming more common that employers require a student be certified as a condition of employment. The American Society of Agronomy through ARCPACS maintains and publishes a registry of certified professionals in several disciplines. Students may be certified as agronomist, crop scientist (specialist), or soil scientist, (specialist, classifier), or horticulturist by completing a program approved by ARCPACS: Federation of Certifying Boards in Agriculture, Biology, Earth and Environmental Sciences. Students with any of the above specializations may complete the certification academic requirements, although those with a science specialization will find they can complete the program with a few hours beyond the number required for a bachelor's degree. Most of the certification requirements can be completed with proper selection of courses as University Core Curriculum substitutes and by using elective courses to fulfill certification requirements. Students are encouraged to discuss their interests with a departmental representative to obtain additional information.

	AREA OF CERTIFICATION ¹			
	Agronomist	Crop Scientist	Soil Scientist	Horticulturist
University Core Curriculum Requirements	43 ²	43 ²	43 ²	43 ²
Chemistry 200 and 201 substituted for				
Chemistry 106	4	4	4	4
Plant Biology 200 substituted for Plant				
Biology 115	4	4	4	4
Agribusiness Economics 204 substitute for				
Economics 113	3	3	3	3
English 101 and 102	6	6	6	6
Speech Communication 101	3	3	3	3
Mathematics 108 ³	3	3	3	3
Other University Core Curriculum requirements	17	17	17	20
Requirements for Major in Plant and Soil Science	77	77	77	77
Courses in two other departments in				
agriculture (All options must take				
Agricultural Education and				
Mechanization 318. It fulfills additional				
mathematics requirements for				
Agronomist and Soil Scientist options)	6	6	6	—
Biological science elective	2	4	—	—
Plant Biology 320	4	4	4	4
Chemistry 210, 211, 340, 341, 350,	9	9	9	9

Economics elective	3	3	—	—
Agribusiness Economics 333.....	—	—	—	3
Engineering elective.....	—	—	3	—
Geology 220.....	—	—	3	—
Plant and Soil Science 305	—	—	—	4
Plant and Soil Science 200, 220, 240 and 381 ..	11	11	11	11
Pest management/plant protection (weed science, plant pathology/entomology, pest control, Plant and Soil Science 420	6	6	—	6
Mathematics (including statistics requirement) 140 and 283.....	7	7	7	—
Other Plant and Soil Science courses: ⁴				
Crop sciences	3	12	3	—
Soil sciences.....	3	3	11	—
Agronomy electives	9	3	3	—
Horticulture				
Plant and Soil Science 322, 423, 424, 432, 436, 437	—	—	—	12
Plant and Soil Science 442, 445, 446, 447, 448	—	—	—	3
Plant and Soil Science 325, 327, 328a, 328b, 422, 428, 429, 430, 434	—	—	—	6
Plant and Soil Science 405, 433, Plant Biology 356, 400, 409, Agricultural Education and Mechanization 318 ⁵	—	—	—	6
Agriculture electives	11	6	14	13
Total	120	120	120	120

¹Meets academic requirements for certification by ARCPACS: Federation of Certifying Boards in Agriculture, Biology, Earth and Environmental Sciences (includes Agronomy, Crop Science, Soil Science, Horticulture and other disciplines).

²The University Core Curriculum requires 41 hours of courses. Chemistry and Plant Biology are 4 hour courses, but only 3 hours count toward core curriculum requirements.

³Mathematics 111 may be substituted.

⁴Plant and Soil Science electives must include 18 hours of structured coursework at the 300- or 400- level with no less than 12 semester hours at the 400 level.

⁵Agricultural Education and Mechanization 318 or equivalent computer course is a departmental requirement.

Plant and Soil Science Faculty

Chong, She Kong, Professor, Ph.D., University of Hawaii, 1979.

Diesburg, Kenneth, Assistant Professor, Ph.D., Iowa State University, 1987.

Elkins, Donald M., Professor, *Emeritus*, Ph.D., Auburn University, 1967.

Gibson, Paul T., Associate Professor, Ph.D., Iowa State University, 1981.

Hillyer, Irvin G., Professor, *Emeritus*, Ph.D., Michigan State University, 1956.

Jones, Joe H., Professor, *Emeritus*, Ph.D., Ohio State University, 1960.

Kapusta, George, Professor, Ph.D., Southern Illinois University, 1975.

Klubek, Brian P., Professor, Ph.D., Utah State University, 1977.

Leasure, J. K., Professor, *Emeritus*, Ph.D., University of Illinois, 1953.

Lightfoot, David A., Assistant Professor, Ph.D., University of Leeds, 1984.

McGuire, James M., Professor and *Dean*, Ph.D., North Carolina State University, 1961.

Midden, Karen L., Associate Professor, M.L.A., University of Georgia, 1983.

Myers, Oval, Jr., Professor, Ph.D., Cornell University, 1963.

Olsen, Farrel J., Professor, Ph.D., Rutgers University, 1961.

Preece, John E., Professor, Ph.D., University of Minnesota, 1980.

Schmidt, Michael E., Assistant Professor.

Stucky, Donald J., Professor and *Chair*, Ph.D., Purdue University, 1963.

Taylor, Bradley H., Associate Professor, Ph.D., Ohio State University, 1982.

Tweedy, James A., Professor, *Vice Chancellor of Administration*, Ph.D., Michigan State University, 1966.

Varsa, Edward C., Associate Professor, Ph.D., Michigan State University, 1970.

College of Applied Sciences and Arts

Elaine M. Vitello, *Dean*

Technically oriented academic programs in the College of Applied Sciences and Arts can lead to the Associate in Applied Science and Bachelor of Science degrees. Educational offerings include:

- 1. Bachelor of Science programs for students with career goals in selected technical/professional areas.
- 2. Associate degree programs for entry of beginning students, transfer students from other institutions, or transfer students from other units within SIUC; and
- 3. Post-associate offerings in occupational areas related to the associate degree programs.

Requirements for Bachelor of Science and Associate in Applied Science degrees as well as additional information for each major offered can be found in program listings below. Several of these majors offer third-year-post-associate specializations to provide students who possess associate degrees with additional competencies.

Departments and programs within the College of Applied Sciences and Arts are:

Department Name	Program	Degree
Applied Arts	Architectural Studies	Baccalaureate
	Commercial Graphics-Design	Associate
	Construction Technology	Associate
	Interior Design	Baccalaureate
Applied Technologies	Automotive Technology	Associate and Baccalaureate
	Tool and Manufacturing Technology	Associate
Aviation Management and Flight	Aviation Flight	Associate
	Aviation Management	Baccalaureate
Aviation Technologies	Aviation Maintenance Technology	Associate
	Aviation Technologies	Baccalaureate
Health Care Professions	Dental Hygiene	Associate and Baccalaureate
	Dental Technology	Associate
	Health Care Management	Baccalaureate
	Mortuary Science and Funeral Service	Associate and Baccalaureate
	Physical Therapist Assistant	Associate
	Physician Assistant	Baccalaureate
	Radiologic Technology	Associate
	Radiologic Sciences	Baccalaureate
	Respiratory Therapy	Associate
Information Management Systems	Electronics Management	Baccalaureate
	Office Systems and Specialities	Associate
Technical and Resource Management	Advanced Technical Studies	Baccalaureate

Anyone interested in the following off-campus programs should contact the Office of Off-Campus Academic Programs, ASA, A 120 (618-536-6609).

Aviation Management
Electronics Management

Fire Science Management
Health Care Management

Students with educational and/or occupational backgrounds or with career objectives in the fields of aviation, electronics, fire science, health care, or interior design are encouraged to apply for admission to these career-specific programs. Students also may choose to apply for admission to Advanced Technical Studies which is designed especially for technically-oriented students seeking career enhancement where no specific Bachelor of Science degree is available. Admission to the Bachelor of Science degree program in Advanced Technical Studies does not imply admission to any College of Applied Sciences and Arts' associate degree program. Requirements for Bachelor of Science degree programs as well as additional information for each of these majors can be found later in this chapter.

Students eligible for admission to the Bachelor of Science programs must meet University entrance requirements and program requirements for admission to the major. Transfer students admitted to SIUC in good standing are eligible to apply for admission to the college's programs. A minimum of 30 semester hours in the core and major courses *must* be taken at SIUC, with at least 24 of these hours to be taken *after* admission to a program. Students must complete all course work in the program core and major requirements as well as the elective areas with a gpa of 2.00 or better to qualify for completion. Students may be admitted to the college's off-campus academic programs if the foregoing requirements and those stated in the *SIUC Military Programs Supplement* to the undergraduate catalog have been met. Additionally, students must fulfill all SIUC requirements including the University Core Curriculum requirements, total hour requirements, residence requirements, and gpa requirements to qualify for completion.

The Capstone Option is an alternative to completion of the University Core Curriculum requirements and is available to qualified students. Students eligible for the Capstone Option are able to complete their bachelor's degree in 60 additional semester hours as approved by the department. To make an application to the Capstone Option, the student must have a 60-hour Associate of Applied Science degree or its equivalent from an occupational or technical training program; a 2.25 or higher gpa on all accredited work prior to the associate degree; and send an application for the Capstone Option by no later than the student's first semester in a participating Capstone major. The student may not have more than 12 hours of course work from the chosen baccalaureate major prior to application. More information about the Capstone Option can be found in Chapter 3.

Provision is made for recognizing various forms of previous educational, military, and occupational experience. This credit is awarded via program/departmental evaluation. Also, cooperative education experience, as well as internship and independent study opportunities, are available.

Additional information on the College of Applied Sciences and Arts and its programs and course offerings is available through the Office of Enrollment Services, College of Applied Sciences and Arts, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

Advanced Technical Studies (Major, Courses)

The Bachelor of Science degree in Advanced Technical Studies (ATS) is designed specifically for the student who has entered a career path for which a traditional baccalaureate degree is not available. The student develops an individualized learning

contract with the assistance of an Advanced Technical Studies adviser. The Advanced Technical Studies major is designed to build upon an individual’s educational and occupational experiences through courses selected to meet technical career objectives. It is ideally suited for community college and technical institute graduates possessing occupationally-oriented associate degrees. Students interested in technical areas not available through associate degrees are also encouraged to consider this major. The individualized nature of this program affords the flexibility to meet the needs of students from many diverse backgrounds who desire to enhance their career opportunities and develop skills in management of their technology.

The Capstone Option is available for eligible students who have obtained an Associate of Applied Science (AAS) degree or its equivalent and have a gpa of 2.25 on a 4.0 scale on all accredited coursework prior to the award of the AAS degree. Application to the Capstone Option must be made no later than the end of the student’s first semester in the baccalaureate degree program. See Chapter 3 for more information regarding the Capstone Option.

Graduates find employment in business and industry in such fields as construction, automotive, data processing systems, office management, architectural drafting/design, graphic design, advertising, property management, small business applications, and allied health careers.

Bachelor of Science Degree, College of Applied Sciences and Arts

The Bachelor of Science degree in Advanced Technical Studies requires a minimum of 120 semester hours, with a minimum of 60 semester hours at SIUC or an accredited four-year college.

University Core Curriculum Requirements ¹	41
Requirements for Major in Advanced Technical Studies	36
ATS Core Requirements (or approved equivalents): Advanced Technical Studies 364, 383, 416, and one of the following: 332 or 421	12
Nine hours selected from Advanced Technical Studies 361, 362, 363, 421, 426, 464, 483 or approved equivalents	9
Fifteen hours of approved upper level electives	15
Approved Technical or Career Electives	43
An associate in applied science degree from an accredited community college meets this requirement.	
A maximum of 12 credit hours of internship, work experience or independent study may be part of these 43 hours.	
Total	120

¹ The first and second years are usually satisfied by an Associate of Applied Science (AAS) degree and students enter ATS as juniors.

Advanced Technical Studies Suggested Curricular Guide¹

THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
ATS 416	3	-	ATS 464	3	-
ATS 364	3	-	ATS 332 or 421	-	3
ATS 383	-	3	University Core ¹	6	6
University Core ¹	3	6	ATS 483 and/or Approved Electives ²	3	3
ATS 361 or 362 ²	3	-	Approved Elective	-	3
ATS 362 or 426 ²	-	3	CEFM 341 or 465 ²	3	-
Approved Elective	3	3	Total	15	15
Total	15	15			

¹Some students will have transferred in with more university core course equivalents than other students. Those needing less core or just hours at a four-year school can substitute elective courses, work experience or internship.

²Certain AAS majors may substitute advanced coursework offered by the college, AAS majors or other Advanced Technical Studies courses.

Architectural Studies (Major, Courses)

The most basic human response to the earth's environment has been the development of methods which increase the probability of survival. The most obvious of these was the creation of shelters by which the impact of climate and the changing seasons could be controlled. From this simple reaction, architecture has evolved which reflects and promotes the cultural, economic and philosophical trends of our societies.

The four-year curriculum in architectural studies offers the beginning level of education for those who intend to pursue a career in this profession or a related field. A structured sequencing of courses is included which provides for a gradual interactive development of required knowledge and skills. This pre-professional preparation is combined with the University Core Curriculum courses to provide a comprehensive scholarly foundation for advancement.

The degree currently meets minimum educational requirements for licensure in architecture in the State of Illinois as overseen by the Department of Professional Regulation. Students also are eligible for participation in the Intern Development Program sponsored by the National Council of Architectural Registration Boards. A wide variety of employment options exists. Some areas include design, planning, preservation, government regulation, construction, building products and facilities management.

To support students in their educational endeavors, department facilities include a resource library complete with books and reference texts, sample room, current manufacturers' catalogs and professional periodicals. A dedicated computer laboratory also is available for investigations in computer-aided drawing and design.

While facilities are provided for use, cost for supplies, individual equipment and required field trips necessary to the successful completion of the program are borne by the student. Due to variation in individual materials used, it is impossible to predict the exact costs for each student. A reasonable estimate of additional expenses is in the range of \$600 per academic year.

Enrollment may be subject to selective admission.

Bachelor of Science Degree, College of Applied Sciences and Arts

University Core Curriculum.....	41 ¹
As per university requirements for baccalaureate degrees, but must include Art and Design 101 or History 201 and History 101a,b or Philosophy 103a,b.	
<i>Requirements for Major in Architectural Studies</i>	(6) + 79
MATH 140	(3) + 1
ASA 126	(3) + 1
ARC 111, 112, 113, 115, 118, 124, 125, 214, 215, 216, 219, 220, 223, 226, 315, 316, 324, 371, 372, 415, 471 each with a minimum grade of C.....	77
Total	120

¹Two courses required for the major (Applied Sciences and Arts 126 and Mathematics 140) will apply toward six hours of University Core Curriculum making a total of 41 in that area.

Architectural Studies Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
ARC 111	5	-	ARC 113	3	-
ARC 112	3	-	ARC 125	4	-
ARC 115	-	4	ARC 223	-	3
ARC 118	3	-	MATH 140	4	-
ARC 124	-	5	HIST 101a or PHIL 103a.....	3	-
ENGL 101,102	3	3	ASA 126.....	-	4
AD 101 or HIST 201.....	-	3	PLB 117.....	-	3
Core Human Health.....	-	2	HIST 101b or PHIL 103b	-	3
			SPCM 101	-	3
Total	14	17	Total	14	16
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
ARC 214	5	-	ARC 315	4	-
ARC 215	-	4	ARC 316	-	3
ARC 216	4	-	ARC 371	-	3
ARC 219	2	-	ARC 372	3	-
ARC 220	-	2	ARC 415	-	6
ARC 226	-	4	ARC 471	-	3
ARC 324	-	4	Core Social Science	3	-
Core Social Science	3	-	Core Interdisciplinary	3	-
Core Multicultural	3	-			
Total	17	14	Total	13	15

Automotive Technology (Major, Courses)

Offering both A.A.S. and B.S. degrees, the Automotive Technology program in the College of Applied Sciences and Arts provides students with an opportunity to obtain a solid foundation of knowledge, experience and skills that will assist in job entry and career advancement in the automotive service field.

Current automotive trends indicate that the automobile will continue to experience changes that include expanded use of electronics and computerized controls for improving engine performance, fuel efficiency, on board diagnostics, exhaust emissions and passenger comfort and safety. These changes will require service technicians who are knowledgeable and highly skilled in specialized areas of automotive technology. This program offers the student an opportunity to specialize in chosen automotive subject areas during the last two semesters of study in the associate degree program. The bachelor's degree program offers the opportunity to develop technical, communication and supervisory skills. The student should expect to spend about \$700 for a required basic tool kit consisting of both standard and metric tools and a digital multimeter.

The Automotive Technology program has achieved master certification by the National Institute for Automotive Service Excellence. Instruction is offered in all eight areas of ASE certification—engine repair, automatic transmissions/transaxles, manual drive trains and axles, front end, brakes, electrical systems, heating and air conditioning and engine performance. All graduates are encouraged to complete the certification process by taking the ASE certification tests.

An advisory committee composed of leaders in the automotive field provides additional guidance to the program. Current members include representatives from General Motors and GM divisions, Ford Motor Company, Chrysler Corporation, Toyota Motor Sales, Nissan Motor Corporation, Mitsubishi Motor Sales, Moog Automotive, Electronic Data Systems, NAPA, automotive dealerships and wholesale/retail outlets.

Associate in Applied Science Degree

During the first year, each student will enroll in core courses that provide opportunities to develop technical skills considered essential to all automotive technicians.

During the second year, the student may choose four areas of study from a selection of automotive technology courses offered. This allows the student to select courses that will assist in developing the chosen career path.

The associate degree can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable educational experience.

2-Year Cooperative Education Programs Offered

CHRYSLER DEALER APPRENTICESHIP PROGRAM (CAP)
A cooperative work/study program is offered by the Chrysler Corporation, its participating dealers, and the College of Applied Sciences and Arts' Automotive Technology program. This associate degree program is two calendar years in length. Final selection for admission to this program is determined by the corporation and its dealer.

GENERAL MOTORS AUTOMOTIVE SERVICE EDUCATIONAL PROGRAM (ASEP)
A cooperative work/study program is offered by General Motors, its participating dealers and the College of Applied Sciences and Arts' Automotive Technology program. This associate degree program is two calendar years in length. Final selection for admission to this program is determined by the corporation and its dealers.

Associate in Applied Science Degree, College of Applied Sciences and Arts

<i>Requirements for Major in Automotive Technology</i>	
Social Science Elective.....	3
ENGL 101	3
SPCM 101	3
IMS 125 or equivalent	3-4
ASA 126 or equivalent	3-4
Approved Electives	6
AUT 120, 150, 160, 170, 180.....	23
Twenty hours of selected 200- and 300-level Automotive Technology courses	20
<i>Total</i>	64-66

Associate in Applied Science Auto Technology Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
AUT 150,170	5	5	Elective (Core or Major)	3	-
AUT 160,180	5	5	AUT 200 or 300 Level	10	10
ENGL 101.....	3	-	SPCM 101	3	-
AUT 120.....	3	-	Core Social Science	-	3
Elective (Core or Major)	-	3	Physics.....	-	3
Math	-	3			
<i>Total</i>	16	16	<i>Total</i>	16	16

Bachelor of Science Degree

The Bachelor of Science Degree in Automotive Technology is designed to provide a combination of automotive technical education, computing skills and communication skills along with theoretical and practical knowledge concerning supervision and management to students interested in careers in the automotive service industry. The program can strengthen previous automotive training received from technical institutes, community college, proprietary institutions, industry-related training programs, and the military. The Capstone option is available to qualified A.A.S. graduates entering the Automotive Technology bachelor's degree program as explained in

this catalog. Major automotive manufacturers, dealerships and the automotive after-market industry are seeking four-year automotive technology graduates. The number of job titles in the area of automotive technology reflects the nature of a diverse and expanding field. Job titles include district manager in training-service, district manager-service, customer assistance specialist, customer service coordinator, service advisor, dealership service manager, technical training specialist, district manager-sales, zone service manager, field executive, technical writer, field service engineer, and district parts manager. Most of these positions require a four-year degree with skills in communications, management and consumer relations, as well as technical knowledge.

4-Year Cooperative Education Programs Offered

MOOG COOPERATIVE PROGRAM

Moog Automotive, a division of Cooper Industries, offers a work/study program in conjunction with the SIUC Automotive Technology program. The program is four calendar years in length and leads to a B. S. degree in Automotive Technology. Participants are selected by employer interviews of students currently enrolled in the Automotive Technology Program.

Bachelor of Science Degree, College of Applied Sciences and Arts

University Core Curriculum	41
Requirements for Major in Automotive Technology	45
(Minimum of 29 hours in 300/400 level courses)	
Major Core Requirements (or Approved Equivalents).....	27
AUT 325, 435	7
Twenty hours selected from the following: (Minimum of 10	
hours in 300/400 level courses) AUT 280, 285, 290, 295,	
320, 360, 370, 380, 390, 430, or 475.....	20
Support Courses (or Approved Equivalents).....	18
Select one course from the following: MGMT 304, 350, ATS	
364.....	3
Select one course from the following: ENGL 491, WED 302,	
ATS 416	3
Select two courses from the following: ATS 383, 421, ACCT	
210, FIN 270, MKTG 304, 350.....	6
Select one course from the following: IMS 229, CS 212	3
Select one course from the following: CEFM 465, AUT 485,	
ATS 332	3
Approved Technical or Career Electives	34
Total	120

Bachelor of Science Automotive Technology Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
AUT 150	5	-	IMS 229	3	-
AUT 160	4	-	Physics	3	-
ENGL 101,102	3	3	SPCM 101	3	-
AUT 120	3	-	AUT 325	4	-
AUT 170	-	5	Core Social Science	3	3
MATH	-	3	AUT 280	-	5
AUT 180	-	4	AUT 285	-	5
Total	15	15	Total	16	13

THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
Core Science.....	3	-	ATS 364	3	-
ATS 416	3	-	Human Health.....	2	-
MKTG 304.....	3	-	Interdisciplinary.....	3	-
Fine Arts.....	3	-	AUT 435	3	-
Humanities	3	3	ACCT 210.....	3	-
AUT 290.....	-	5	AUT 370	-	5
AUT 360.....	-	5	AUT 380	-	5
AUT 485.....	-	3	Multicultural.....	-	3
			ATS 421	-	3
Total	15	16	Total	14	16

Aviation Flight (Major, Courses)

The Aviation Flight program is designed to prepare beginning students for the Federal Aviation Administration Commercial Pilot Certificate including the multi-engine and instrument ratings. Instruction is conducted at Southern Illinois Airport, Carbondale, Illinois. Flight theory courses will supplement and complement each flight course. In order to maintain the highest possible standards for flight and theory courses, each lesson of every course is submitted to and approved by the Federal Aviation Administration. FAA designated check pilots will examine the student's performance and effectiveness periodically during each flight course. University Core Curriculum Requirements and basic science courses will be supplemented with a required core of flight courses and other related technical courses to enhance the student's professional value to the aviation industry. In addition to the University tuition and fees, substantial lab fees are assessed for each flight course. For current charges, contact Aviation Flight.

The associate of Applied Science degree can be completed in two academic years plus one summer semester at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-instructional educational experience, however, the twenty-one semester hours of aviation flight courses must be taken at SIUC. Credit may be granted for a Private Pilot certificate earned prior to enrollment at SIUC. A departmental evaluation of student's competence is required before posting credit for outside training or beginning further training in the program.

The aviation flight degree program requires the submission of a program application in addition to the University admission application. You can not be fully admitted to the SIUC Aviation Flight Program until the response to the second application is received.

Associate In Applied Science Degree, College of Applied Sciences and Arts

<i>University Core Curriculum Requirements</i>	
English 101, 102, Speech Communication 101 and University Core Curriculum mathematics or equivalent	12
<i>Requirements for the Major in Aviation Flight</i>	
Applied Sciences and Arts 126 or Physics 203a and 253a	4
Geography 330	3
Approved elective course.....	3
Core Requirements	38
Aviation Flight Courses: 201, 203, 204, 206, 207a, b	21
Aviation Flight Technical Courses: 200, 202, 205, 210, 260	17
Total	90

Aviation Flight Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
AF 200, 202	3	3	Elective	3	-
AF 201, 203	5	5	AF 260.....	-	4
ENGL 101, 102	3	3	AF 204, 205.....	5	3
MATH.....	-	3	AF 210, 206.....	4	2
GEOG 330.....	3	-	SPCM 101.....	3	-
			ASA 126a,b	-	4
			AF 207a,b.....	2	2
Total.....	14	14	Total.....	17	15

Aviation Maintenance Technology (Major, Courses)

Skilled technicians are in demand in the aviation industry, both in airlines and general aviation. The industry demands people who possess a wide range of knowledge and ability provided by University Core Curriculum Requirements as well as special technical training.

Students enrolled in Aviation Maintenance Technology learn reciprocating and jet powerplants; cabin environment and jet transport systems; hydraulics; fuel systems; ignition-starting systems; carburetion and lubricating systems; instruments; and powerplant testing in coordinated classroom and laboratory work. The program is fully accredited by the Federal Aviation Administration. Students who wish to qualify for the FAA Airframe and Powerplant (A+P) Certificate are required to take a two-course post-associate specialization. Upon completion of the associate degree program, students may continue their studies toward a baccalaureate degree. (see Aviation Technologies).

Instruction is conducted at the Southern Illinois Airport between Carbondale and Murphysboro in a combination laboratory-classroom-hangar facility.

The student should expect to spend approximately \$500 for a personal tool kit and special study materials.

Executives in the aviation industry constitute an advisory committee which serves the Aviation Maintenance Technology program. Current members are: Loren Doughty, Director of Customer Training, Bell Helicopter Textron, Fort Worth, Texas; Robert Bauman, RAB Consulting Services, Makanda, Illinois; Raoul Castro, Aerospace International Management, Upland, California; Joe Cooley, UPS, Aircraft Records, Louisville, Kentucky; Joseph DePaola, Xionix Simulation Inc., Euless, Texas; Patrick Graham, Section Manager, Douglas Aircraft Company, Long Beach California; Robert A. Harms, Chief of Maintenance, Archer Daniels Midland Co., Decatur, Illinois; Dennis Hitt, Manager of Customer Service, Bendix-King Radio Corporation, Olathe, Kansas; James A. Kennedy, Manager, Avionics Department, Midcoast Aviation, Inc., Cahokia, Illinois; Robert Long, Hartzell Propeller Products, Piqua, Ohio; James F. McNamara, Captain, Fleet Manager A300, American Airlines, DFW Airport, Texas; Terry Washow, Manager, Maintenance Administration, American Airlines, Chicago, Illinois; Mike Kelly, Bendix/King Radio Corporation, General Aviation-Avionics Division, Olathe, Kansas; Harry B. Fanning, Group Manager F-15 Repairs, McDonnell Douglas Aerospace, St. Louis, Missouri.

Associate in Applied Science Degree, College of Applied Sciences and Arts

<i>Requirements for Major in Aviation Maintenance Technology</i>	
English 101, Speech Communication 101	6
Information Management Systems 125 or University Core Mathematics	3-4
Aviation Maintenance Technology 110, 111, 112, 113, 114, 116, 201, 203, 204, 205, 206, 210, 211, 212, 213, 214, 215, 216	67

Elective (in social science)	3
Total	79-80

Aviation Management (Major, Courses)

The aviation management major is designed to build upon technical training in aviation maintenance, flight, avionics technology, air traffic control, aircraft operations support or other aviation-related fields. The technical training may be gained through Southern Illinois University at Carbondale, other post-secondary institutions, proprietary schools, and military, government agencies (international or domestic) or through government certified flight or maintenance training schools. Students entering the Aviation Management major are encouraged to complete the requirements of an aviation-related associate degree under the provision of the Capstone option as explained in Chapter 3. As an alternative to an associate degree in aviation, students in aviation management should have aviation-related work experience, internship experience or technical training. Finally, concurrent enrollment in aviation-related degree programs, internships or technical training is required for those students not having prior aviation training, experience or education. The aviation management degree program requires the submission of a program application in addition to the University admission process.

Students who major in aviation management have the opportunity to participate in the following aviation management-related programs:

1. The Federal Aviation Administration (FAA) approved Airway Science Curriculum at SIUC.
2. The Federal Aviation Administration approved Air Traffic Control Cooperative Education Program at SIUC. (FAA has suspended this program nationally since 1993.)
3. The United Airlines/SIUC Cooperative Education Program in Aviation Flight and Aviation Management.
4. The Delta Airlines Internship in Flight Operations and Management.
5. The United Parcel Service Airlines Flight Operations Intern Program.

Graduates of the Aviation Management program obtain professional, technical and management positions in aviation manufacturing, the airlines, general aviation, military aviation and government agencies related to aviation.

Bachelor of Science Degree, College of Applied Sciences and Arts

<i>University Core Curriculum Requirements</i>	41
<i>Requirements for Major in Aviation Management</i>	48
Core Requirements: Advanced Technical Studies 364, 416, and two of the following: Aviation Management 385, 402 and/or Advanced Technical Studies 383	12
Fifteen hours selected from Aviation Management 360, 370, 371, 372, 373, 374, 375, 376, 377, 386, 401, 460	15
Twelve hours selected from the following as approved by the adviser: Advanced Technical Studies 363; Aviation Management 319, 320, 350; or approved equivalent	12
Nine hours of additional Aviation Management courses or adviser approved specialization electives	9
<i>Approved Career Electives</i>	<u>31</u>
Total	120

Aviation Management Suggested Curricular Guide

THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
ATS 364.....	3	-	AVM 373.....	3	-
ATS 416.....	3	-	AVM 375 ²	3	-
AVM 371.....	3	-	AVM 402.....	3	-
ECON 240 ¹ or 241 ¹	3	-	Core Science.....	-	3
Core Social Science or Science ...	3		POLS 114 ¹ or Core Social Sci-		
ATS 363b ²	3	-	ence.....	-	3
AVM 385.....	-	3	Core Integrative Studies ¹	3	-
AVM 386.....	-	3	ATS 363 a,d ²	3	-
AVM 370 or AVM 360 ¹	-	3	AVM 372.....	-	3
Computer Elective ¹	-	3	AVM 374.....	-	3
Core Humanities.....	-	3	AVM 376 ²	-	3
ATS 363a,c ²	-	3	AVM 377 or MKTG 304 ¹	-	3
			Core Humanities or Fine Arts ¹ ...	3	-
			ATS 363e ²	-	3
Total.....	15	15	Total.....	15	15

¹ On campus only
² Off-campus only

Aviation Technologies (Major, Courses)

Whether general aviation aircraft or transport, modern aircraft require highly-trained technicians to manage hardware, troubleshoot systems and maintain airframe structures and powerplants. The programs in the Department of Aviation Technologies are ranked among the best in the country, and were developed with input from industry representatives and the Federal Aviation Administration (FAA), to provide the requisite skills and broad educational experience necessary in today's competitive environment. Optional paths within the major provide a great deal of flexibility in preparing for a career in the aviation industry. Students may qualify for the FAA Airframe and/or Powerplant certificates only, or in conjunction with a degree program, may forego certification entirely to concentrate on a particular area of interest. The Bachelor of Science degree program in Aviation Technologies is designed to enhance technical training students have received in aviation maintenance or electronics. This technical training may be obtained through SIUC (see Aviation Maintenance Technology) or be received at other post-secondary institutions, in the military, or in the case of aviation maintenance, at other FAA approved maintenance schools certified under F.A.R. Part 147.

Students entering the Aviation Technologies program are encouraged to have completed an appropriate associate degree or it's equivalent under the provisions of the Capstone option as explained in Chapter 3. This option allows qualified students to fulfill their degree requirements by completing no more than 60 semester hours of coursework beyond their associate degree. There are three specializations: Aircraft Maintenance, Helicopter Maintenance and Aviation Electronics.

Courses in each of these areas have been selected and designed to provide the student with optimum exposure to theory in the classroom and develop practical, hands-on skills both in the hanger and in specially-designed, task-dedicated laboratories. The Aviation Technologies facilities, located at Southern Illinois Airport between Carbondale and Murphysboro, Illinois, provides students with more than 10 million dollars of the best available equipment including fixed and rotary wing aircraft, airline-type cockpit procedure trainers (CPT's), an advanced composite structures laboratory, and computer laboratory. The student should expect to spend about \$600 for a tool kit.

Bachelor of Science Degree, College of Applied Sciences and Arts

AIRCRAFT MAINTENANCE SPECIALIZATION

The aircraft maintenance specialization provides students who have completed an FAA approved airframe and powerplant program with the opportunity to advance their technical skills in aviation and to develop management level skills essential to industry.

<i>University Core Curriculum Requirements</i>	41
Requirements for Major in Aviation Technologies.....	42
Core Requirements.....	12
AVT 317.....	3
AVT 318.....	3
AVT 376.....	3
AVM 385 or ATS 364	3
Specialization Requirements.....	18
AMT 405	3
AVT 410.....	3
AVT 416.....	3
AVT 324.....	5
AVT 325.....	4
Specialization Electives.....	12
Advisor approved electives to reflect students career interest and goals. May be any combination of coursework to include AVT, AVM, AMT, ATS.	
<i>Technical or Career Electives</i>	37
An Associate in Applied Science degree or equivalent certification in Aviation Maintenance (Airframe and Powerplant) from an accredited college, community college, or technical institute meets this requirement.	
<i>Total</i>	120

Aircraft Maintenance Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
ENGL 101, 102.....	3	3	Core Science.....	3	-
MATH 108	3	-	Core Social Science	-	3
SPCM 101.....	-	3	Technical Electives.....	13	5
Technical Elective	10	9	Specialization Elective	-	6
<i>Total</i>	16	15	<i>Total</i>	16	14
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
Core Humanities.....	3	3	Core Social Science	3	-
Core Science.....	-	3	Core Fine Arts.....	3	-
Specialization Elective	6	-	Multicultural.....	3	-
AVT 317	3	-	Core Human Health	-	2
AVT 318	3	-	Interdisciplinary	-	3
AVT 324	-	5	AMT 405.....	3	-
AVT 325	-	4	AVT 410, 416.....	3	3
<i>Total</i>	15	15	AVM 385 or ATS 364	-	3
			AVM 376	-	3
			<i>Total</i>	15	14

Bachelor of Science Degree, College of Applied Sciences and Arts

AVIATION ELECTRONICS SPECIALIZATION

The aviation electronics specialization is designed to accommodate students who have an aviation maintenance or electronics background. The airframe and powerplant student will develop flight line maintenance and troubleshooting skills in avia-

tion electronics. The electronics student will develop both flight line maintenance and bench repair skills in aviation electronics.

University Core Curriculum Requirements	41
Requirements for Major in Aviation Technologies	43
Core Requirements	12
AVT 317	3
AVT 318	3
AVM 376	3
AVM 385 or ATS 364	3
Specialization Requirements	21
AVT 233	3
AVT 237	3
AVT 321	2
AVT 324	5
AVT 325	4
AVT 323	4
Specialization Electives	10
Advisor approved electives from AVT 320, 322, 330, 360, 365 or 370.	
Technical or Career Electives	36
An Associate in Applied Science degree or equivalent certification in Aviation Maintenance (Airframe and Powerplant) or Electronics from an accredited college, community college, or technical institute meets this requirement.	
Total	120

Aviation Electronics Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
ENGL 101, 102	3	3	Core Social Science ¹	3	-
MATH 108	3	-	Core Science	-	3
SPCM 101	-	3	Core Humanities ²	-	3
Approved Technical Electives .	10	10	Approved Technical Elective ...	10	6
			AVT 233	3	-
			AVT 237	-	3
Total	16	16	Total	16	15
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
Core Social Science ¹	3	-	Core Science	-	3
Core Humanities ²	3	-	Interdisciplinary	3	-
Multicultural	-	3	Core Human Health	-	2
Core Fine Arts	-	3	AVT 323	4	-
AVT 321	2	-	Approved Specialization Elect...	6	4
AVT 317	3	-	AVM 385 or ATS 364	-	3
AVT 318	3	-	AVM 376	-	3
AVT 324	-	5			
AVT 325	-	4			
Total	14	15	Total	13	15

¹Students may take only one history course to satisfy this requirement.
²Students may take one course from groups 1 and 2 or may select a sequence in History, Philosophy or English.

Bachelor of Science Degree, College of Applied Sciences and Arts

HELICOPTER SPECIALIZATION

The helicopter specialization provides students who have completed an FAA approved airframe and powerplant program with the opportunity to advance technical skills in helicopter theory, maintenance and overhaul, and inspection. Additional management level courses compliment this specialization.

University Core Curriculum Requirements 41

Requirements for Major in Aviation Technologies 42

 Core Requirements..... 12

 AVT 317 3

 AVT 318 3

 AVM 376..... 3

 AVM 385 or ATS 364 3

 Specialization Requirements..... 18

 AMT 301 3

 AMT 302..... 6

 AMT 304..... 3

 AMT 306..... 6

 Specialization Electives..... 12

 Advisor approved electives to reflect students career interests and goals. May be any combination of coursework to include AVT, AVM, AMT or ATS.

 Technical or Career Electives..... 37

 An Associate in Applied Science degree or equivalent certification in Aviation Maintenance (Airframe and Powerplant) from an accredited college, community college, or technical institute meets this requirement.

Total..... 120

Helicopter Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
ENGL 101, 102.....	3	3	Core Science.....	3	-
MATH 108.....	3	-	Core Social Science ²	-	3
SPCM 101.....	-	3	Technical Elective.....	13	5
Technical Elective.....	10	9	Specialization Elective.....	-	6
Total.....	16	15	Total.....	16	14
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
Core Humanities ¹	3	3	Core Social Science ²	3	-
Core Science.....	-	3	Core Fine Arts.....	3	-
Specialization Elective.....	6	-	Multicultural.....	-	3
AVT 317.....	3	-	Core Human Health.....	-	2
AVT 318.....	3	-	Interdisciplinary.....	-	3
AMT 301.....	-	3	AMT 304.....	3	-
AMT 302.....	-	6	AMT 306.....	6	-
Total.....	15	15	AVM 385 or ATS 364.....	-	3
			AVM 376.....	-	3
			Total.....	15	14

¹ Students may take only one history course to satisfy this requirement.

² Students may take one course from group 1 and 2 or may select a sequence in History, Philosophy, or English.

Commercial Graphics – Design (Major, Courses)

The advertising business is a growing field, presenting ever increasing opportunities for men and women who have creative and artistic ability. Trained people are needed to develop story illustrations, advertising layouts, billboard design, point-of-purchase displays, package designs, direct mail pieces, annual report designs, television commercials, finished lettering, fashion illustrations, airbrush and photo-retouching, and many others. Students in the program develop multiple art skills so they may qualify for initial positions in many different areas of advertising art and design. Each individual has a base upon which to build a career according to personal special interests and talents.

Each graduating design student is required to pass, with 90% accuracy, a vocabulary proficiency test and to have compiled a professionally acceptable portfolio of work.

The student should expect to spend approximately \$1,500 to \$2,000 for supplies, equipment, and materials over a two year period.

An active advisory committee whose members represent large corporations and departments, large and small advertising agencies, and freelance designers and illustrators, serve the program. At the general meeting each year in April all graduating students will be interviewed with their portfolios to prepare them for their first job search efforts.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience. Eligible students may wish to continue work toward the Advanced Technical Studies bachelor of science degree in the College of Applied Sciences and Arts.

An individual must first be accepted academically to the university, present a portfolio of required pieces, and participate in a workshop drawing test. The 45 best qualified will be invited to enter the program the following fall.

Associate in Applied Science Degree, College of Applied Sciences and Arts

<i>Requirements for Major in Commercial Graphics-Design</i>	
Psychology 102	3
English 101, 102, Speech Communication 101	9
Commercial Graphics 110, 120, 122, 124, 130, 132, 133, 134, 210, 215, 222, 224, 230	56
Commercial Graphics 109 or 150	2
Graphic Design Proficiency Examination requirement	0
Total	70

Commercial Graphics-Design Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
CG 109 ¹	2	-	CG 150 ¹	2	-
CG 110a,b	3	3	CG 210	6	-
CG 120	4	-	CG 215	-	6
CG 122	4	-	CG 222	-	6
CG 124	4	-	CG 224	6	-
CG 130	-	4	CG 230	-	1
CG 132	-	4	ENGL 102	3	-
CG 133	-	1	PSYC 102	3	-
CG 134	-	4			
SPCM 101	-	3			
ENGL 101	3	-			
Total	18-20	19	Total	18-20	13

¹Students are required to take either Commercial Graphics 109 or Commercial Graphics 150.

Construction Technology (Major, Courses)

The Construction Technology curriculum is designed to meet the needs of the construction industry. Particular emphasis is placed upon residential and light commercial construction. The technician working in construction must be able to communicate in the language of the industry, understand and interpret construction drawings, specifications, and methods of building fabrication and assembly. Technicians also must be capable of working in the area of middle management that exists between architect and craftsman. The technician is expected to carry out the mandates of building design. The program provides sufficient theory and laboratory work so that the graduate can perform in areas of design, drafting, construction methods, estimating, and supervision.

The curriculum is designed to accept both new freshmen and transfer students. Students entering with industrial experience or courses taken in the military may be given credit by proficiency or transcript evaluation.

Students entering this program should expect to spend about \$150 over a two-year period for instruments, tools, materials, and supplies.

The program is served by an advisory committee whose members have extensive experience in the construction field.

Graduates of the program may find employment as construction engineering aides, assistants within the construction supervision field, building materials sales representatives, building code inspectors, and estimators.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experiences.

Associate in Applied Science Degree, College of Applied Sciences and Arts

Requirements for Major in Construction Technology

English 101 and Speech Communication 101	6
Information Management Systems 120, 125, Applied Sciences and Arts 126	11
Construction Technology 100, 102, 103, 104, 105, 110, 125, 203, 207, 208, 209, 210, 211, 212, 225	45
Electives (in Humanities or Social Sciences)	3
Total	65

Construction Technology Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
CST 100	1	-	CST 105	2	-
CST 102	4	-	CST 125	3	-
CST 103	-	4	CST 207	-	3
CST 104	4	-	CST 209	4	-
CST 110	5	-	CST 210	-	3
CST 203	-	3	CST 211	3	-
CST 208	-	3	CST 212	-	3
IMS 125	4	-	CST 225	-	3
ASA 126	-	4	SPCM 101	-	3
ENGL 101	-	3	Elective	-	3
			IMS 120	3	-
Total	18	17	Total	15	18

Dental Hygiene (Major, Courses)

The program leading to a baccalaureate degree in dental hygiene is designed to prepare the graduate to successfully enter the oral health profession of dental hygiene in any one of the six designated roles of the dental hygienist as defined by the American Dental Hygienists' Association: clinician, educator/health promoter, manager, researcher, consumer advocate and change agent. In addition, the graduate is prepared to continue their education in graduate or professional programs. The curriculum is designed to assist students in the development of knowledge, skills, attitudes and values that will enable them to adapt to a complex and changing health care delivery system. Special emphasis is placed on the development of skills related to periodontal disease, skills and attitudes to meet the needs of the geriatric population, and access to care for those persons unable to attain care, especially the underserved rural segment of the population. Students are required to complete all dental hygiene courses with a grade of C or higher.

Dental hygiene is a licensed profession. In order to meet licensure requirements, the student must graduate from an accredited program and successfully pass a writ-

ten National Board Examination, as well as the appropriate State/Regional Practical (clinical) Board Examination.

Admission requirements are the same as for all the baccalaureate entrance requirements at SIUC. Once accepted into the University, the student must submit a separate application to the dental hygiene program. All applicants who apply to the dental hygiene program are evaluated on high school mathematics and science grades, ACT scores, college mathematics and science grades, overall grade point average and earned credits according to SIUC calculations, and previous experience as dental assistant or experience in any health related field. In order to be considered for admission into the professional sequence, you must be accepted into Southern Illinois University at Carbondale and have completed a minimum of 35 semester hours of college credit. These hours must include the following courses or approved substitutions: English 101, English 102, Mathematics 108 or 113, Zoology 118, Psychology 102, Sociology 108, Microbiology 201, Allied Health Careers Specialties 141 and Chemistry 140a,b. Prospective students may complete the University Core Curriculum and the basic science courses at other colleges or universities as well as at SIUC. Thirty-six students begin the professional sequence in fall semester. In addition to textbooks and tuition, expenses of approximately \$2,500 are required to cover the cost of instruments, uniforms and other professional supplies.

The dental hygiene program offers an on-site clinic to provide the student with practical clinical instruction. Students perform dental hygiene services in the clinic under the direct supervision of dental hygiene faculty composed of licensed dental hygienists and licensed dentists. Students also are involved in the provision of care and education through a variety of community projects. The program is served by an advisory committee composed of representatives from community dental practices, dental education, dental industry and the professional community.

The program also is designed to serve as a degree completion program for dental hygienists who have completed an associate degree in dental hygiene from any accredited dental hygiene program. The Capstone Option is available to eligible students who have obtained an Associate of Applied Science with a 2.25 (4.0 scale) or higher gpa.

The program in dental hygiene is accredited by the Commission on Dental Accreditation, a specialized accrediting body recognized by the Commission on Recognition of Post-secondary Accreditation and by the United States Department of Education. The Commission on Dental Accreditation can be contacted at 312 440-2719 or at 211 East Chicago Avenue, Chicago IL 60611.

Associate in Applied Science Degree, College of Applied Sciences and Arts

Requirements for Major in Dental Hygiene

Chemistry 106	3
Psychology 102	3
Sociology 108	3
English 101	3
Speech Communication 101	3
Microbiology 201	4
Food and Nutrition 215	2
Allied Health Careers Specialties 141	4
Dental Hygiene 101, 206, 207, 210, 212, 218a,b, 220, 226, 233, 247, 315, 318, 320, 322, 340, 341, 347, 348, 355, 414, 440	55
Total	80

Bachelor of Science Degree, College of Applied Sciences and Arts

<i>University Core Curriculum</i>	41
Including: CHEM 140a ¹ , ENGL 101 and 102, MATH 108, SPCM 101, PSYC 102, SOC 108 and ZOOL 118 ¹ .	
<i>Requirements for Major in Dental Hygiene</i>	79
Including: DH 101, 206, 207, 210, 212, 218a,b, 220, 226, 233, 247, 315, 318, 320, 322, 340, 341, 347, 348, 355, 414, 415, 440, 441 and 442, AHC 141, CHEM 140b, FN 215, HCM 365 and MICRO 201	
<i>Total</i>	120

¹These two courses are required for a major in dental hygiene and are approved substitutions for the University Core Curriculum requirements in science. The additional hours will be included in the total hours required for the degree.

Dental Hygiene Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
ENGL 101, 102.....	3	3	DH 101, 212.....	1	1
MATH 108	3	-	DH 207.....	3	-
ZOOL 118	4	-	DH 218a,b	3	2
SOC 108.....	3	-	DH 206.....	2	-
CHEM 140a, 140b	4	4	DH 226.....	2	-
MICRO 201	-	4	DH 233.....	2	-
PSYC 102.....	-	3	SPCM 101	3	-
AHC 141.....	-	4	DH 210.....	-	3
			DH 220.....	-	3
			DH 247.....	-	3
			DH 318.....	-	4
<i>Total</i>	17	18	<i>Total</i>	16	16
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
DH 340, 347	2	2	DH 414, 315.....	2	2
DH 320, 355	3	3	DH 441, 442.....	3	3
DH 341, 322	3	2	DH 348.....	2	-
HCM 365.....	3	-	DH 415, 440.....	2	2
FN 215	2	-	University Core	3	6
University Core	2	6			
<i>Total</i>	15	13	<i>Total</i>	12	13

Dental Technology (Major, Courses)

The dental technology program prepares the student to be a competent dental technician in the commercial laboratory, an educational institution, a dental manufacturing company, or the private dental office. To implement the goal, the prospective student must satisfactorily meet the requirements of courses in both the dental technology area and in the science, business, and humanities area.

Persons interested in careers in dental technology should have a sincere interest in working with their hands and find satisfaction in their creative work.

Enrollment of beginning students is limited by size of faculty and physical facilities with new students admitted only in the fall semester. Admission to the University qualifies the applicant for admission to the Dental Technology program. Students must meet baccalaureate entry requirements.

The program is served by an advisory committee made up of practicing dentists, dental laboratory owners, dental technicians, dental sales representatives, and a second year dental technology student.

Graduates of the two-year dental technology program find that career opportunities are excellent. The trained dental technician not only has a wide choice of geographic location for the pursuit of a career, but can also choose working conditions. Graduates are employed by commercial dental laboratories, dental schools, dental supply companies, private dental offices, or are self-employed in their own dental laboratories.

The student should expect to spend about \$1000 for a dental kit, laboratory jacket, Delta Tau Club, and recognized graduate exam fee over the two-year period.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, College of Applied Sciences and Arts

<i>Requirements for Major in Dental Technology</i>	
English 101, Speech Communication 101	6
Physics 101, Chemistry 106	6
Applied Sciences and Arts 120	3
Information Management Systems 229	3
Dental Technology 102, 103a,b, 104a,b, 110, 113a,b, 128, 143, 202, 204a,b, 205, 206a,b, 210	61
Total	79

Dental Technology Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
DT 102, 110	4.5	4.5	DT 202	4.5	-
DT 103a,b	4.5	4.5	DT 204a,b	9	-
DT 104a,b	4.5	4.5	DT 206a,b	-	9
DT 143	1	-	DT 205	1	-
ENGL 101	3	-	DT 113b	2	-
CHEM 106	3	-	IMS 120, 229	3	3
DT 113a	-	2	DT 210	-	4.5
DT 128	-	1	SPCM 101	-	3
PHYS 101	-	3			
Total	20.5	19.5	Total	19.5	19.5

Electronics Management (Major, Courses)

The Electronics Management (ELM) major provides an essential foundation in basic electronics and offers a blend of advanced technical and managerial course work for students pursuing careers in the electronics industry. The program allows students the flexibility to choose a curriculum that will compliment their career goals and work experience.

The 120-semester hour ELM curriculum consists of two areas: A 41-semester hour University Core Curriculum and a 79-semester hour major in Electronics Management. The University Core Curriculum provides a foundation for students to be successful in their major and life beyond the university. Students entering the program as freshman are not required to have a background in electronics. Requirements for the major provide a sequential program in electronics and allow students to select classes which lead toward various careers in the electronics industry.

A student in Electronics Management may choose the Electronics Technology Specialization. This specialization allows the student to select advanced technical curricula focused on particular areas within the electronics industry. Graduates with an Electronics Technology Specialization possess the skills required of the technologist entering areas such as biomedical equipment technology, communication technology, industrial electronics, or microcomputer technology.

The ELM program is well suited for individuals possessing an AS or AAS degree, electronics training through the military or civilian agencies, or work experience in the electronics industry. Credit for post secondary course work, military training and work experience is evaluated on an individual basis. Students with an approved AAS degree in Electronics Technology or its equivalent may be able to transfer up to 36

hours of approved career electives. In addition, transfer credit for University Core Curriculum requirements varies depending on previous course work. An individual who has earned an AAS degree also may qualify for the Southern Illinois University at Carbondale Capstone Option. Capstone is a two-year option that gives maximum credit for previous academic and work experience in the student's occupational field. More information about the Capstone Option can be found in Chapter 3.

Bachelor of Science Degree, College of Applied Sciences and Arts

ELECTRONICS MANAGEMENT MAJOR

Individuals choosing the Electronics Management curriculum are provided with the technical background necessary for entry level technical positions and the managerial background for advancement into areas requiring management and supervisory skills. This curriculum focuses on the skills and knowledge necessary to effectively integrate technology into the work place.

The process of evaluating and acquiring new and existing technologies, maintaining and managing technological systems and effectively utilizing human resources will be studied. The graduate from this course of study will be able to communicate effectively and coordinate the efforts of skilled technicians in managing complex systems. Skills acquired will allow the graduate to train people in the use and maintenance of complex systems, plan and prioritize efforts to maximize the use of technological resources, and explain technical ideas to non-technical personnel.

University Core Curriculum Requirements	41
Requirements for Major in Electronics Management	79
Approved Career Electives	31-36 ¹
Electronics Management 101, 102, 111, 112, 121, 201, 202, 211, 212, 221, 224, Information Management Systems 102 (or approved equivalents)	
Management Core	21-24 ¹
Advanced Technical Studies 364 and 416	6
Electronics Management 441 and 451	6
Electronics Management 365, 385, 387 and/or 388	9-12 ¹
Technical Core	15
Electronics Management 302, 340, 341, 303 or 342, 313 or 343	
Internship, independent study, or approved equivalent	4-12 ¹
Total	120

¹ As approved by the Department.

Electronics Management Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
ELM 101, 102	3	3	ELM 201, 202	3	3
ELM 111, 112	3	3	ELM 211, 212	3	3
ELM 121	-	3	ELM 221, 224	3	3
ENGL 101, 102	3	3	IMS 102	3	-
Mathematics	3	-	SPCM 101	3	-
Science	-	3	Science	-	3
Humanities	3	-	Fine Arts	-	3
Total	15	15	Total	15	15

THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
ELM 340, 341	3	3	ELM 302	3	-
ELM 365	-	3	ELM 342	3	-
ELM 385	-	3	ELM 343	3	-
ATS 364	3	-	ELM 387, 388	3	3
ATS 416	3	-	ELM 441	-	3
Humanities	3	-	ELM 451	-	3
Interdisciplinary	-	3	ELM Electives	-	4
Social Science	3	3	Human Health	-	2
			Multicultural	3	-
Total	15	15	Total	15	15

Bachelor of Science Degree, College of Applied Sciences and Arts

ELECTRONICS MANAGEMENT MAJOR - ELECTRONICS TECHNOLOGY SPECIALIZATION

The Electronics Management major who chooses the Electronics Technology Specialization will take course work designed to provide an effective school-to-work transition for specific careers in the electronics industry. A mandatory internship ensures that students receive field experience within their chosen career field. The curriculum places emphasis on skills necessary to achieve long-term career goals within one of the following segments of the electronics industry:

- Biomedical Equipment Technology
- Communications Technology
- Industrial Technology
- Microcomputer Technology

Completion of this specialization provides graduates with advanced skills required by electronic technologists. Technical skills include: the planning and implementation of preventive maintenance programs and the testing, troubleshooting and calibration of electronic equipment and systems. In addition, the specialization will include skills in writing, interpreting and presenting technical documentation.

University Core Curriculum	41
Requirements for the Major in Electronics Management with a specialization in Electronics Technology	79
Approved Career Electives	36
Electronics Management 101, 102, 111, 112, 121, 201, 202, 211, 212, 221, 224, and Information Management Systems 102	
Electronics Technology Specialization	43
Specialization Core Requirements	22
Electronics Management 319, 340, 341, 404, 414, 451 and Advanced Technical Studies 416	
Specialization Electives	17-18 ¹
Selected from the following: Electronics Management 301, 302, 303, 304, 305, 306, 307, 309, 311, 312, 313, 314, 317, 337, 342, 343, 365, 441, or Allied Health Careers 105	
Internship independent study, or approved equivalent	3-4
Total	120

¹ As approved by the Department.

Electronics Management with a Specialization in Electronics Technology Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
ELM 101, 102	3	3	ELM 201, 202	3	3
ELM 111, 112	3	3	ELM 211, 212	3	3
ELM 121	-	3	ELM 221, 224	3	3
ENGL 101, 102	3	3	IMS 102	3	-
Mathematics	3	-	SPCM 101	3	-
Science	-	3	Science	-	3
Humanities	3	-	Fine Arts	-	3
<i>Total</i>	15	15	<i>Total</i>	15	15
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
ELM 340, 341	3	3	ELM 319	-	4
ELM Electives	3	6	ELM 404	3	-
ATS 416	3	-	ELM 414	3	-
Humanities	3	-	ELM 451	-	3
Interdisciplinary	-	3	ELM Electives	6	6
Social Science	3	3	Human Health	-	2
<i>Total</i>	15	15	Multicultural	3	-
			<i>Total</i>	15	15

Fire Science Management (Major, Courses)

This Bachelor of Science in Fire Science Management is designed to provide advanced practical course work in the areas of management and supervision. It is designed primarily for individuals who possess or are nearing completion of the Associate in Applied Science degree or its equivalent in a fire science-related field from a technical institute or community college.

The Capstone Option is available for eligible students who have obtained a fire science-related Associate in Applied Science (AAS) degree or its equivalent and have a gpa of 2.25 on a 4.0 scale on all accredited course work prior to the award of the AAS degree. Application to the Capstone Option must be made no later than the end of the student's first semester in the baccalaureate degree program. (See Chapter 3 for more information regarding the Capstone Option.)

Graduates of this program may find employment in supervisory and management positions in the fire service, insurance industry, fire equipment manufacturing industry, and other related fields.

Currently this major is offered only at off-campus locations. For additional information about this major, contact the Office of Off-Campus Academic Programs.

Bachelor of Science Degree, College of Applied Sciences and Arts

<i>University Core Curriculum Requirements</i>	41
<i>Requirements for Major in Fire Science Management</i>	48
Core Requirements: Fire Science Management 332, 421 and Advanced Technical Studies 364, 416	12
Twenty-four hours from Fire Science Management 383, 387, 388, 398, 402, 413, Advanced Technical Studies 321 and 412	24
Twelve hours selected from Advanced Technical Studies 363a, b, c, d or e	12
<i>Approved Career Electives</i>	31
<i>Total</i>	120

Fire Science Management Suggested Curricular Guide

THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
ATS 416.....	3	-	FSM 398.....	3	-
ATS 364.....	3	-	FSM 402.....	3	-
FSM 332.....	3	-	ATS 321.....	3	-
ATS 363b.....	3	-	ATS 363a,d.....	3	-
FSM 383.....	-	3	FSM 413.....	-	3
FSM 387.....	-	3	FSM 421.....	-	3
FSM 388.....	-	3	ATS 412.....	-	3
ATS 363a,c.....	-	3	ATS 363e.....	-	3
Electives.....	3	3	Electives.....	3	3
Total.....	15	15	Total.....	15	15

Health Care Management (Major, Courses)

The Health Care Management major is designed to provide course work and experience in the areas of management and supervision for individuals who have training in health-oriented fields from colleges and universities, technical institutes, community colleges, proprietary institutions or military technical schools. Graduates from diploma programs also may be eligible for admission.

This major builds upon many career specialties including dental hygiene, dental technology, laboratory technology, medical assisting, medical corps, medical records, medical service corps, mortuary science, nursing, physical therapist assistant, radiologic technology, and respiratory therapy.

The Capstone Option is available to eligible students who have obtained a health care related associate of applied science, or its equivalent, and have a gpa of at least 2.25 on a 4.0 scale (SIUC calculation) on all work prior to the completion of the associate of applied science degree. Application to the Capstone Option must be made no later than the end of the student's first semester or twelve semester hours in the baccalaureate degree program. More information about the Capstone Option may be found in Chapter 3.

To be considered for enrollment into Health Care Management, prospective students must first obtain admission to the University as a Health Care Management major. To be approved for entry into the professional sequence, applicants must submit additional application materials which will be sent to those admitted to the University.

Selection will be based on the academic credentials submitted for admission into the University and an interview with a designated Health Care Management academic advisor.

Prospective students attending another college or university prior to transferring to SIUC should concentrate on completing articulated or approved substitutes for SIUC's University Core Curriculum. Prior to taking courses that appear to equate to a professional sequence course requirement, the applicant should consult with the Health Care Management academic advisor. Students will be selected for the professional sequence either summer, fall or spring semesters.

Students must attain a minimum gpa of 2.0 within the Health Care Management major for graduation. Students must earn a minimum grade of C in all Health Care Management courses to qualify for an internship experience. Graduates may obtain management and supervisory positions in various health and medical care facilities such as hospitals, nursing homes, public health departments, voluntary health agencies and health care training institutions.

Bachelor of Science Degree, College of Applied Sciences and Arts

<i>University Core Curriculum Requirements</i>	41
<i>Requirements for Major in Health Care Management</i>	48
Core Requirements: 360, 364, 365, 366 and 381	15
Hours selected from other HCM courses	12
Internship, independent study or equivalent	12
Health care management electives approved by the adviser	9
<i>Approved Career Electives</i>	31
<i>Total</i>	120

Health Care Management Suggested Curricular Guide

THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
HCM 360, 366	3	3	HCM Elective	3	3
HCM 364, 381	3	3	Career Electives	12	-
HCM 365, 385	3	3	HCM 422 or ATS 363	-	12
Elective	6	6			
<i>Total</i>	15	15	<i>Total</i>	15	15

Interior Design (Major, Courses)

The Interior Design program is continually responsive to the demands and standards of qualification of the profession and its related fields. A four-year curriculum is offered resulting in a Bachelor of Science degree in Interior Design. The program holds first professional degree accreditation from the Foundation of Interior Design Education Research.

Students receive a comprehensive, interdisciplinary education in preparation for design and administrative positions in the fields of residential, commercial, and contract design. The successful candidate is qualified to practice professionally in a wide range of positions with interior and architecture firms, corporations, government agencies, or independently.

The approach toward interior design education at SIUC provides a comprehensive technical emphasis as the basis for problem solving. At the core of the required course work are classes and studios which provide knowledge of design and the design process including programming, schematic design, design development, and construction documents. Support courses to complement and enhance the core consist of drawing, presentation, furniture, materials, interior design history, lighting, plumbing, acoustics, mechanical systems, and professional practice and current topics.

To support students in their educational endeavors, program facilities include a resource library complete with sample room, current manufacturers' catalogs, professional periodicals, and a computer laboratory for investigations in computer-aided drafting and design.

While facilities are provided for use, costs for supplies, individual equipment, and required field trips necessary to the successful completion of the program are borne by the student. Due to the variation in individual materials use, it is impossible to predict the exact costs for each student. A reasonable estimate of additional expenses is in the range of \$600 per academic year.

Bachelor of Science Degree, College of Applied Sciences and Arts

<i>University Core Curriculum Requirements</i>	41
As per University requirements for baccalaureate degrees, but must include AD 101.	

Requirements for Major in Interior Design	83
Art and Design 110, 120	6
Workforce Education and Development 335	2
Interior Design 111, 112, 121, 122, 211, 231, 232, 251, 252, 271, 272, 274, 351, 371, 372, 391, 392, 432, 451, 471, 491, 492, and 3 hours professional elective at the 300- or 400-level as approved by the adviser	75 ¹
Total	124

¹All major courses require a minimum grade of C.

Interior Design Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
ID 111, 112	4	4	ID 211	3	-
ID 121, 122	3	3	ID 231, 232	3	3
ENGL 101, 102 ¹	3	3	ID 251	-	3
Core Humanities ²	3	-	ID 271, 272	3	3
AD 101, 110	3	3	ID 274	-	3
AD 120	-	3	MATH 108 ¹	3	-
			SPCM 101 ¹	3	-
			Core Science ²	-	3
Total	16	16	Total	15	15
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
ID 252	3	-	ID 432	-	3
ID 351	3	-	ID 451, 471	3	3
ID 371, 372	3	3	ID 491, 492	4	4
ID 391, 392	4	4	Elective	3	-
WED 335	2	-	Core Humanities ²	3	-
Core Science ²	-	3	Core Social Science ²	3	-
Core Social Science ²	-	3	Core Interdisciplinary ²	-	3
Core Human Health ²	-	2	Core Multicultural ²	-	3
Total	15	15	Total	16	16

¹Required University Core Curriculum courses for Interior Design major.
²Select for University Core Curriculum

Mortuary Science and Funeral Service (Major, Courses)

This baccalaureate program is the only Mortuary Science and Funeral Service program offered in a public university in the state of Illinois. Course work includes advanced content to prepare the student for the National Board Examination and requirements for licensure within the profession. The Mortuary Science and Funeral Service graduate is prepared to assume all traditional roles in the funeral service profession and obtain management/ownership positions. The program was initially developed in response to a request from the Illinois Funeral Directors Association. It is accredited by the American Board of Funeral Service Education and meets licensing requirements of the Illinois Department of Professional Regulations.

This program is designed to accept students directly from high school or to accommodate students transferring from other accredited post-secondary institutions. Thirty students will be selected to begin the professional sequence each fall semester. Enrollment of beginning students is limited due to the number of faculty and physical facilities.

To be considered for enrollment in the Mortuary Science and Funeral Service program, prospective students must first obtain admission to the University as a Mortuary Science and Funeral Service major. To be approved for entry into the professional sequence, applicants must submit additional application materials which will be sent to those admitted to the University. Selection will be based on a candidate's high school rank, grades in high school mathematics and science courses, and ACT results. For transfer students, the grade point average as calculated by SIUC and the earned

college level credits will be used for selection criteria. Recommendations of funeral directors and others are required. Decisions on who is selected into the professional sequence will be made beginning in January on a rolling basis.

Prospective students attending another college or university prior to transferring to SIUC should concentrate on completing courses articulated or approved as substitutes for SIUC's University Core Curriculum requirements. Prior to taking courses that appear to equate to the professional sequence, the applicant should consult with Mortuary Science and Funeral Service.

In addition to professional course work, the student will be responsible for the University Core Curriculum as well as a number of courses which will lead to an understanding of the psychological, sociological and theological implications of life and death. Faculty members in the professional courses are licensed funeral directors and embalmers with experience in the profession. The program's Advisory Committee is composed of mortuary science and funeral service professionals.

Professional courses are offered in the program's preparation room-laboratory. The student is required to complete the Hepatitis B vaccine series before participating in the laboratory classes. The vaccine may be acquired at the SIUC Health Service, a local health department or through a private physician. The cost of this vaccine is the responsibility of the student, and documentation showing completion of the vaccine must be presented to the advisor prior to registration. In addition to the Hepatitis B vaccine requirement, there is a laboratory fee of \$150 to cover the expense of personal protective equipment.

Graduates of the program will be eligible to take the National Board Examination in embalming and funeral directing. Since laws governing the profession are enacted at the state level, licensing and qualifications vary among states. Prospective students should contact the licensing body of the state in which they wish to attempt licensure. Career opportunities are excellent and to date all graduates who desire placement within the profession have been offered entry level employment.

The mortuary science and funeral service program can be completed at Southern Illinois University at Carbondale or in combination with an institution of higher education.

Associate in Applied Science Degree, College of Applied Sciences and Arts

Requirements for Major in Mortuary Science and Funeral Service

Chemistry 106	3
Zoology 115/118	3
Psychology 102	3
English 101, 102	6
Speech Communication 101	3
Information Management Systems 120	3
Office Systems Specialities 208	3
Health Education 334	3
Mortuary Science and Funeral Service 101, 108, 225a,b, 230, 245, 256, 257, 351, 352, 410, 411, 412	48
Total	75

Bachelor of Science Degree, College of Applied Sciences and Arts

<i>University Core Requirements</i>	41
<i>Requirements for Major</i>	70
MSFS 101, 108, 225a,b, 230, 240, 245, 255, 256, 257, 270, 302, 340, 351, 352, 360, 401, 410, 411, 412	
<i>Approved Career Electives</i>	9
Total	120

Mortuary Science and Funeral Service Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
ZOOL 115 or 118.....	3-4	-	ENGL 102.....	3	-
MATH 113.....	3	-	CHEM 106.....	3	-
PSYC 102.....	3	-	SPCM 101.....	3	-
MUS 103.....	3	-	MSFS 230.....	4	-
MSFS 101, 108.....	3	3	Major Elective.....	4	-
ENGL 101.....	-	3	Core Elective.....	-	3
IMS 120.....	-	3	MSFS 256.....	-	3
SOC 108.....	-	3	IMS 208.....	-	3
PHIL 103a.....	-	3	MSFS 245.....	-	4
			MSFS 240.....	-	3
Total.....	15-16	15	Total.....	17	16
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
MSFS 302.....	4	-	MSFS 360.....	4	-
MSFS 225a,b.....	4	4	MSFS 351.....	4	-
MSFS 255.....	3	-	MSFS 352.....	3	-
MSFS 257.....	3	-	MSFS 401.....	3	-
MSFS 270.....	2	-	MSFS 410.....	-	5
MSFS 340.....	-	3	MSFS 411.....	-	5
PHIL 104.....	-	3	MSFS 412.....	-	2
PHSL 201.....	-	2			
Core Elective.....	-	3			
Total.....	16	15	Total.....	14	12

Office Systems and Specialties (Major, Minor, Courses)

Recent developments in office systems and related technologies have resulted in many new career opportunities for administrative personnel with enhanced general office skills or specific training in the medical, legal, or court reporting fields. Both men and women have opportunities for rewarding business careers in office support positions in these areas. A major in Office Systems and Specialties may lead to an Associate in Applied Science Degree and prepares a student for an exciting career by offering a combination of courses designed to improve keyboarding skills, computer literacy, English language usage, office procedures competency, and document production techniques.

Each student selects one of four areas of specialization: Administrative Assistant, Legal Office Assistant, Medical Office Assistant, or Court and Conference Reporting. In each of these four areas, specialized courses are required which enhance the student's office skills and introduce the student to specialized vocabulary and procedures.

A student selecting the Administrative Assistant specialization will take advanced courses in word processing concepts and applications, transcription, office management, and administrative procedures. For a student more interested in an office support position as a legal office assistant, advanced courses in applied law, legal document preparation, legal terminology, shorthand, and legal office support procedures are offered. Basic anatomy and physiology, medical terminology, medical transcription, medical administrative procedures, and health insurance form preparation are some of the courses required of students in the Medical Office Assistant Specialization. Students choosing the Court and Conference Reporting Specialization follow a five-semester regime which includes legal and medical terminology, machine shorthand, two-voice and four-voice dictation and transcription, and applied law.

All students in Office Systems and Specialties are required to complete either a one-semester cooperative office internship (at least four credit hours) or a court reporting internship which involves the verification of at least forty clock-hours of actual writing time on the shorthand machine. Students in both of these learning situations are closely supervised by faculty.

A student majoring in Office Systems and Specialties may, in addition to taking

regularly scheduled courses, transfer credits from an accredited post secondary school (such as a community college); pass a proficiency examination; or receive credit for significant office-related experience.

Students entering the Court Reporting specialization must be able to type thirty words per minute. In addition, good language skills are important. Court and Conference Reporting may be pursued within the associate degree program or as a post-associate offering for those who have completed an associate degree in a related field at a community college or other post-secondary institution.

Many courses will require students to purchase consumable supplies for use in those courses. In addition to these materials, students enrolled in court reporting are required to supply their own shorthand machine with realtime capabilities.

Associate in Applied Science Degree, College of Applied Sciences and Arts

Requirements for Specialized Major in Office Systems and Specialties

English 101, 102	6
Office Systems and Specialties 101, 111, 112, 113, 114, 208, and/or 209	18-21
Specialization Requirements	37-49
Administrative Assistant	37-38
Legal Office Assistant	38
Medical Office Assistant	37
Court and Conference Reporting	49
Total	64-73

Administrative Assistant Specialization Requirements

Speech Communication 101	3
College of Applied Sciences and Arts 120	3
Office Systems and Specialties courses	27-28
(a). Shorthand option: 107, 109, 118, 131, 132, 140, 205, 232, 233	27
(b). Non-shorthand option: 107, 109, 118, 140, 205, 233, 240, 241, Information Management Systems 109 and elective approved by adviser	28
Office Systems and Specialties 290, Cooperative Office Experience	4
Total	37-38

Legal Office Assistant Specialization Requirements

Speech Communication 101	3
Information Management Systems 120	3
Office Systems and Specialties 131, 132, 20 credit hours chosen from 107, 109, 118, 182, 220, 221, 223, 233	28
Office Systems and Specialties 290, Cooperative Office Experience	4
Total	38

Medical Office Assistant Specialization Requirements

Speech Communication 101	3
College of Applied Sciences and Arts 120	3
Allied Health 141	4
Office Systems and Specialties 107, 109, 118, 261, 262, 263, 264 and an elective approved by adviser	23
Office Systems and Specialties 290, Cooperative Office Experience	4
Total	37

Court and Conference Reporting Specialization Requirements¹

Allied Health 141	4
Office Systems and Specialties 180, 182, 186, 187, 188, 261, 281, 282,	

283, 284, 288, 289, 385 ² 386 ³ , 389 ⁴	45
Total	49

¹Includes requirement of two five-minute timed writings at 60 gross words per minute typing speed with a maximum of five errors (Office Systems and Specialties 113 or 114 will fulfill this requirement).

²Includes requirement of passing three five-minute dictation tests with 95% accuracy at 225 wpm using a two-voice question and answer format (Office Systems and Specialties 385 will fulfill this requirement—a grade of C or better is required).

³Includes requirement of passing three five-minute jury charge/legal dictation tests with 95% accuracy at 200 wpm and three five-minute literary dictation tests with 95% accuracy at 200 wpm (Office Systems and Specialties 386 will fulfill this requirement—a grade of C or better is required).

⁴Internship includes requirement of 40 hours of verified writing time on a shorthand machine, a 40-page usable transcript, and transcription of simulated RPR skills test (Office Systems and Specialties 389 will fulfill this requirement—a grade of C or better is required).

Administrative Assistant Specialization Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
OSS 101	3	-	OSS 107.....	2	-
OSS 109	3	-	OSS 113.....	-	3
OSS 111	3	-	OSS 140.....	3	-
OSS 112	-	3	OSS 205.....	-	3
OSS 114	-	3	OSS 208, 209.....	3	3
OSS 118	-	3	OSS 233.....	3	-
ENGL 101, 102	3	3	OSS 240, 241.....	3	3
IMS 109	-	3	OSS 290.....	-	4
SPCM 101.....	3	-	IMS 120.....	3	-
			Elective	-	3
Total.....	15	15	Total	17	19

Court and Conference Reporting Specialization Suggested Curricular Guide ¹

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
OSS 112, 113	3	3	OSS 114, 101.....	3	3
OSS 180	1	-	OSS 283.....	3	-
OSS 182	-	3	OSS 284.....	3	-
OSS 186, 187	4	4	OSS 289, 288.....	3	3
OSS 188	-	3	OSS 385.....	-	3
OSS 261	3	-	OSS 386.....	-	3
ENGL 101, 102	3	3	OSS 389.....	-	3
			AHC 141.....	4	-
Total.....	14	16	Total	16	15

¹ A summer session of nine hours to include OSS 208 or 209, 281 and 282 is also part of the curriculum. If summer courses are unavailable, another semester will be required due to course sequencing.

Legal Office Assistant Specialization Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
OSS 101, 112	3	3	OSS 107.....	2	-
OSS 109, 114	3	3	OSS 113.....	3	-
OSS 111, 118	3	3	OSS 132.....	-	4
OSS 131, 182	3	3	OSS 208, 209.....	3	3
ENGL 101, 102	3	3	OSS 220, 221.....	3	3
SPCM 101.....	3	-	OSS 233, 223.....	3	3
IMS 120	-	3	OSS 290.....	-	4
Total.....	18	18	Total	14	17

Medical Office Assistant Specialization Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
OSS 107	-	2	OSS 101.....	3	-
OSS 109, 118	3	3	OSS 113, 114.....	3	3
OSS 111, 112	3	3	OSS 208, 209.....	3	3
AHC 141	-	4	OSS 261, 262.....	3	3
ENGL 101, 102	3	3	OSS 263, 264.....	3	3
IMS 120	3	-	OSS 290.....	-	4
SPCM 101.....	3	-	Elective	3	-
Total.....	15	15	Total	18	16

Minor in Office Systems and Specialties (for students with a major in Spanish)

The minor in Office Systems and Specialties is intended for students with a major in

Spanish who wish to train as bilingual office assistants. For those skilled in the office support areas of shorthand, keyboarding, and transcription, the minor requirements are Office Systems and Specialties 101, 107, 109, 205, 208, 232, 233, 290, and six to ten credit hours of approved electives in Office Systems and Specialties courses. For those unskilled in the office support areas of shorthand, keyboarding, and transcription, the minor requirements include the courses above and Office Systems and Specialties 111, 112, 113, 114, 118, 131 and 132.

Physical Therapist Assistant (Major, Courses)

The physical therapist assistant program, which has been accredited by the Commission on Accreditation in Physical Therapy Education, is designed to prepare the student to work under the direction of a licensed physical therapist to treat disabilities resulting from birth defects, disease, or injury. Physical therapy helps the patient to develop strength, mobility, coordination, and skills needed to manage pain.

Students will learn massage, exercise, physical agents, and other therapeutic techniques in actual practice in the University's Clinical Center. They will work with physical therapists and physical therapist assistants performing therapeutic techniques and assessments. The student should expect to spend approximately \$150 for uniforms and professional dues during their course of study. Students are expected to provide documentation of immunization or waiver for HBV. Many hospitals are now requiring HBV before internship experiences. Before graduation the student will serve a twelve-week internship in two separate facilities away from the University Campus.

The program is served by an advisory committee made up of practicing physical therapists, physical therapist assistants, students and educators who provide expertise to assure a curriculum which will prepare graduates to meet the physical therapy needs of the public.

Increasing numbers of elderly and chronically ill persons and the rapid expansion of health care programs in both urban and rural areas have created an urgent demand for physical therapy personnel. Employment opportunities are available in hospitals, rehabilitation centers, extended care facilities, out patient clinics and schools. Physical therapy provides a unique service and requires a close interpersonal relationship with the patient. The student must possess the following qualities to work with people: (1) good mental and physical health, (2) stamina, (3) good coordination and manual dexterity, and (4) spirit of cooperation and a positive attitude, and (5) the ability to problem solve.

There is a limited enrollment to this program, students must meet baccalaureate entrance requirements, and admission is selective. Prospective applicants should make early application to the University. Once admitted in the pre-Physical Therapist Assistant category, the student will receive a second application specific to the program. Selection into the program is based upon evaluation on both applications in relationship to other applicants.

This associate degree program may be completed entirely at Southern Illinois University at Carbondale or in combination with community colleges or other extra-institutional educational experiences. This associate degree can be completed in one calendar year if the applicant has successfully completed the appropriate college level courses before program entry.

The credits from the physical therapist assistant major will not necessarily transfer to a professional physical therapy program.

Associate in Applied Science Degree, College of Applied Sciences and Arts

Requirements for Major in Physical Therapist Assistant

Zoology 115, Physiology 208 and 209 and either Chemistry 106 or Physics 101 or Information Management Systems 229	10-11
Psychology 102	3
English 101	3
Speech Communication 101	3
Allied Health Careers Specialties 105	2
Health Education 334	3
Physiology 220 (with a minimum grade of C)	3
Physical Education 302, 320, and 325 or 326	7-8
Psychology 301, or 303, or 304, or 305	3
Physical Therapist Assistant 107, 113, 202, 203, 204, 205, 208, 209, 213, 214, 321, 322 (each with a minimum grade of C)	36
Total	73-75

Physician Assistant (Major, Courses)

The Physician Assistant program is offered by the Department of Health Care Professions in the College of Applied Sciences and Arts through collaboration with the School of Medicine. The curriculum provides didactic and clinical training to prepare primary care physician assistants to practice medicine with physician supervision.

The physician assistant is often the first health care provider to see a patient and performs a variety of primary care tasks including collecting historical and physical data from the patient and ordering appropriate laboratory tests. Working with the physician, the physician assistant summarizes this information and participates in formulating and executing a treatment plan to meet the patient's needs. Under physician supervision, the physician assistant makes assessments and provides therapy for basic health-related problems. Also, the physician assistant can evaluate psychological aspects of a patient's health, counsel when appropriate, and teach patients about primary health problems. With physician approval, the physician assistant makes referrals when indicated. The physician assistant can perform technical skills, such as EKGs, venipuncture, minor suturing and giving injections. Graduates of the Physician Assistant program are trained as primary care providers and awarded the Bachelor of Science degree.

To be considered for enrollment in the Physician Assistant program, prospective students must be admitted to the University and have completed both the University Core and biological science requirements. Prospective students must complete the following courses: Allied Health Careers 105, Biology 306, Chemistry 140a and b, Mathematics 108, Microbiology 201, Physiology 201 and 208, Psychology 102 and Zoology 118. Completion may be at SIUC or from another accredited institution. Approved substitutions may also be used. Students who have not completed the University Core and biological science requirements should contact the College of Science Advisement Office for admission as a pre-physician assistant student and for advisement on the University Core and biological science requirements.

Students who have completed the University Core and biological science requirements should contact the Physician Assistant program advisor in the Department of Health Care Professions for program application information. Enrollment in the Physician Assistant program is limited and based on a competitive process. Selection is based on grade point average and earned credits according to SIUC's calculations, completion of the program application, and an interview. Preference will be given to applicants who have health care experience. Approximately fifty students will be se-

lected for an interview with a maximum of thirty students being admitted to the professional sequence.

Students will be selected for the professional sequence to begin study only in the summer session. Those accepted into the program will be notified of acceptance during the spring semester prior to the summer of entry. The curriculum is a structured two-year sequence with one year of classroom, laboratory and clinical experiences and one-year clinical rotation with seminars.

Bachelor of Science Degree, College of Applied Sciences and Arts

<i>University Core Requirements</i>	41
<i>Biological Science Requirements</i>	15
Chemistry 140a,b, Biology 306, Microbiology 201, Physiology 201, 208	
<i>Requirements for Major in Physician Assistant Program</i>	72
First Year Sequence:.....	40
Physician Assistant 300, 310, 320	
Second Year Sequence:	32
Physician Assistant 420, 430, 440, 450	
<i>Total</i>	128

Physician Assistant Suggested Curricular Guide

THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
PA 310	16	-	PA 430.....	12	-
PA 320	-	16	PA 440.....	-	12
			PA 450.....	-	2
<i>Total</i>	16	16	<i>Total</i>	12	14
FIRST SUMMER	SUMMER		SECOND SUMMER	SUMMER	
PA 300	8		PA 420.....	6	
<i>Total</i>	8		<i>Total</i>	6	

Radiologic Sciences (Major, Courses)

The program in Radiologic Sciences prepares qualified health care professionals. These health care professionals function as first assistants to the physician in medical practice, utilizing radiant energy, ionizing radiation (X-Ray), other forms of electromagnetic energy, and sound waves for the imaging, diagnosis, and treatment of disease. Each distinct specialty option has its own educational criteria, accreditation and clinical training requirements. The traditional medical specialties of radiography, radiation therapy, medical diagnostic sonography, and magnetic resonance imaging/computed tomography, are available at SIUC.

The program prepares technologists for entry-level positions and also prepares the technologist who wishes to gain additional expertise. The basic radiologic technology curriculum is designed to meet the guidelines for the Joint Review Committee on Education in Radiologic Technology. The baccalaureate with options in either medical diagnostic sonography, magnetic resonance imaging/computed tomography, or radiation therapy meets specific accreditation guidelines and provides opportunities for professional growth for radiologic technologists.

To be considered for enrollment into the Radiologic Sciences program, prospective students must first obtain admission to the University. To be approved for entry into the major and professional sequences, applicants must submit additional application material.

Prospective students must complete the following courses at SIUC or approved articulated substitutes at another accredited college or university before beginning the

professional sequence courses: English 101 and 102, Speech Communication and Media Arts 101, Mathematics 108, Zoology 115, Philosophy 104, Psychology 102, Allied Health Careers 141, Chemistry 106 or Physics 101. All applicants who apply to the program are evaluated on college mathematics and science grades and the number of hours of college credit and the college gpa. An applicant's grade point average as calculated by SIUC and the total earned credits will be considered. Preference will be given to Illinois residents residing in central and southern Illinois (Interstate 80 and below).

Accreditation guidelines place limits on the enrollment in this program. Thirty-five students begin the professional sequence each fall. In addition, approximately twenty graduates from associate degree radiologic technology programs will be accepted in each option for degree completion. Admission is available either summer, fall or spring semesters. The professional sequence begins in the fall semester only.

Bachelor of Science Degree, College of Applied Sciences and Arts

The Bachelor of Science degree in Radiologic Sciences consists of forty-one semester hours of University Core Curriculum requirements, fifty-three professional core hours, and twenty-six semester hours in one of the Radiologic Sciences' options.

MEDICAL DIAGNOSTIC SONOGRAPHY (ULTRASOUND) OPTION

This option is designed to prepare qualified medical diagnostic sonographers. The courses and clinical experiences meet accreditation criteria.

Ultrasound, one of the more recently developed specialties in diagnostic radiology, utilizes a high frequency sound wave similar to sonar. The reflected echoes from the body tissues are displayed as two-dimensional images on a video monitor. Some medical problems that are diagnosed with ultrasound include gallstones, tumors, cysts and fetal abnormalities. The technologist who performs the examination is called a sonographer. Sonographers work under the supervision of either a doctor of medicine or osteopathy who is responsible for the use and interpretation of the ultrasound procedure.

While most sonographers work in hospitals, particularly in radiology, cardiology, vascular surgery and obstetrical departments, many will also find employment in outpatient clinics and mobile services. Ultrasound equipment manufactures also employ sonographers to market their products.

RADIATION THERAPY OPTION

Radiation therapy technologists assist radiation oncologists in all aspects of the administration of radiation therapy treatment; their primary responsibility consists of exposing specific areas of the patient's body to prescribed doses of ionizing radiation. Radiation therapy technologists also provide appropriate patient care; this includes exercising judgment when administering treatment and adhering to the principle of radiation protection for the patient, self and others.

MAGNETIC RESONANCE IMAGING/COMPUTED TOMOGRAPHY OPTION

This option is designed to prepare technologists in the advanced areas of magnetic resonance imaging (MRI) and computed tomography (CT). The MRI and CT components will emphasize physics, technology, instrumentation and sectional anatomy. Technologists employed in these capacities will be supervised by a board certified radiologist, but will be afforded a greater amount of responsibility and independence in the performance of their duties.

Bachelor of Science Degree in Radiologic Sciences, College of Applied Sciences and Arts

<i>University Core Requirement</i>	41
Including: CHEM 106 or PHYS 101, PHIL 104, PSYC 102 , ZOOL 115, MATH 108, ENGL 101 and 102, SPCM 101	
<i>Professional Core Requirements</i>	53
Including: AHC 141, RAD 102, 112, 132, 202, 212, 222, 232, 312, 332, 342, 352, 372a,b	
<i>Radiologic Sciences Option (Select One)</i>	26
Ultrasound: RAD 361, 371, 381, 391, 401, 411, 421, 431	
Radiation Therapy: RAD 360, 370, 380, 390, 400, 410, 420	
MRI/CT: RAD 363, 373, 383, 393, 403, 413	
<i>Total</i>	120

Radiologic Sciences Suggested Curricular Guide with Options in Ultrasound, Radiation Therapy and MRI

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
ENGL 101, 02.....	3	3	RAD 102	3	-
MATH 108	3	-	RAD 222	-	10
SPCM 101.....	-	3	RAD 112	3	-
ZOOL 115	3	-	RAD 372a	-	1
AHC 141.....	4	-	RAD 132	3	-
CHEM 106.....	-	3	RAD 212	-	2
PHIL 104	3	-	RAD 202	3	-
PSYC 102.....	-	3	Core Elective.....	3	2
Core Elective.....	-	3			
<i>Total</i>	16	15	<i>Total</i>	15	15
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
RAD 332.....	10	-	Option Courses.....	13	13
RAD 372b.....	1	-			
RAD 342.....	3	-			
RAD 232.....	-	3			
RAD 312.....	-	3			
RAD 352.....	-	4			
Core Electives.....	3	6			
<i>Total</i>	17	16	<i>Total</i>	13	13

Radiologic Technology (Major)

Radiography is an allied health specialty concerned with the production of x-ray films which enable the physician to diagnose disease processes occurring in the human body. The course of study involves mastering the ability to control radiation production and the ability to position the body properly in order to obtain radiographs of the required anatomical structure.

The curriculum is designed to prepare students to become registered radiologic technologists. Completion of the program provides graduates with the educational requirements necessary to take the national certification examination administered by the American Registry of Radiologic Technologists.

To be accepted into the radiologic technology degree program, the student must have completed the requirements for the allied health careers specialties program and be admissible under the University baccalaureate entry requirements. These advanced radiologic technology courses combine classroom and clinical education, which upon completion allows the graduate to become registry eligible and to receive an Associate in Applied Science degree in radiologic technology.

The professional courses can be completed in two summer sessions and four regular academic semesters. The summer sessions and the regular semester sessions will utilize both classroom and clinical education learning experiences.

Associate in Applied Science Degree, College of Applied Sciences and Arts

<i>Requirements for Major in Radiologic Technology</i>	
English 101	3
Speech Communication 101	3
Mathematics 110 or 113	3
Chemistry 106 or Physics 101	3
Allied Health Careers Specialties 105 and 141	6
Information Management Systems 229	3
Guided Electives/Support Courses	10
Major Courses	58
Radiologic Sciences 102, 112, 132, 202, 212, 222, 232, 312, 322, 332, 342, 352, 362, 372a,b,c	
Total	89

Respiratory Therapy Technology (Major, Courses)

Respiratory therapy is an allied health specialty concerned with the treatment, diagnostic testing, management, control and care of patients with deficiencies and abnormalities associated with respiration. It involves the therapeutic use of medical gases and administering apparatus, environmental control systems, medications, ventilator control and breathing exercises, cardiopulmonary resuscitation, maintenance on natural, artificial and mechanical airways, and diagnostic cardiac and pulmonary function studies.

The respiratory therapy curriculum is designed to prepare students to become registered respiratory therapists. Completion of the course provides graduates with the educational requirements necessary to take the national registry examination administered by the National Board of Respiratory Care (NBRC) and the Pulmonary Specialty Exam (CPFT).

To be considered for enrollment into the Respiratory Therapy program, prospective students must first obtain admission into the University. To be approved for entry into the professional sequence, applicants must submit additional application material.

Prospective students must complete the following courses at SIUC or approved articulated substitutes offered at another accredited college or university before taking the first professional sequence courses: Allied Health Careers 105 and 141, Chemistry 106, English 101, Physics 101, Psychology 102, Speech Communication and Media Arts 101, Mathematics 110 or 113, Zoology 118 and Microbiology 201. An applicant's grade point average as calculated by SIUC and the total earned credits will be considered. Preference will be given to Illinois residents residing in central and southern Illinois (Interstate 80 and below).

Accreditation guidelines place limits on the enrollment in this program. Twenty-five students will be selected to begin the professional sequence each fall. The professional sequence begins in the fall only.

A firm background in science and the ability to communicate is mandatory to satisfactorily complete the program. The professional respiratory therapy courses consist of both formal classroom, laboratory and clinical experiences. The clinical experience will be in a variety of locations to provide maximum opportunity for procedures. These sites are chosen in consultation with the student and the clinical coordinator of the program. It is highly advisable that the student complete all prerequisites before starting the professional sequence in the second year. The student should have all program application materials completed as soon as possible, since enrollment is limited. The minimum length of time to complete this program is two and one-half calendar years (five academic semesters and one summer session). While the regular

semesters will utilize classrooms, laboratories and clinical education experiences, the final fall semester is a full-time clinical internship at a designated full-service hospital. In the final semester, exit evaluations are administered by the program and adjunct faculty to assess clinical and theoretical competency. Students are required to complete these satisfactorily to obtain a certificate of completion from the program. Articulation with other programs can offer the ability to apply program course requirements fully toward baccalaureate credit.

Associate in Applied Science Degree, College of Applied Sciences and Arts

<i>Requirements for Major in Respiratory Therapy Technology</i>	
University Core Curriculum Requirements	19
English 101, Speech Communication 101, Mathematics 110 or 113, Chemistry 106, Physics 101, Psychology 102, Zoology 118	
Support Courses	15
Allied Health Careers Specialties 105 and 141, Health Care Man- agement 364, Microbiology 201, Information Management Sys- tems 229	
Major Courses	48
Respiratory Therapy 203, 213, 223, 243, 253, 263, 273, 283, 293, 303, 313, 323, 343, 353, 363, 373a,b	
Total	82

Tool and Manufacturing Technology (Major, Courses)

The Tool and Manufacturing Technology major offers three specializations: Machine Tool (computer aided machining), Metal Fabrication and Processes, and Tool Design. These options provide training in a variety of manufacturing processes needed to successfully compete in today's job market in manufacturing, construction, and mining industry.

Graduates of Machine Tool (CAM) specialization should have the technical skills to assist engineers in research, development, and testing. They should also have skills in metal cutting and Computer Numerical Control (CNC) programming needed to successfully compete for jobs such as tool and die maker, tool room machinist, CNC machine tool programmer, CNC machine tool operator, model maker and maintenance machinist.

The Metal Fabrication and Processes specialization provides an opportunity to blend basic machining skill, computer aided manufacturing, robotics, machine tool programming, welding and fabrication skills with the technical skills needed to successfully compete for jobs in research and development, computer aided fabrication, robotic welding, model maker, materials testing, construction welding, maintenance welding and metal fabrication shops.

The Tool Design specialization provides the in-depth training required to develop computer aided design skills. Emphasis will be on the design of production tooling, stamping and form dies, mold dies, jigs, and fixtures for CNC tools. Basic machining and welding skills in combination with concentrated computer aided drawing and design skills provide the graduate with the technical skills to enter the manufacturing industry as qualified tool design technicians.

The tool and manufacturing curriculum is designed to award credit where applicable for industrial experience, special courses taken during military training, and transfer work from community colleges. Graduates of recognized area vocational centers or private vocational schools will be given an opportunity to qualify for advanced placement and proficiency credit.

The tool and manufacturing curriculum fits between the areas occupied by the me-

chanical and manufacturing engineer and the skilled trades person. It includes theory procedures, techniques, and skills from each of these areas and falls approximately halfway between.

Students in this program will have the advantage of courses in computer aided manufacturing, computer aided design, robotics, and computer integrated manufacturing in addition to traditional metal working and related classes. Students should learn to program CNC equipment, read working drawings, design basic jigs and fixtures, make shop sketches, build progressive dies, form dies, modify and repair equipment, select proper materials for repair and construction, heat treat tool steels, perform sophisticated welding operations and develop process planning sequences for manufacturing.

Advanced courses beyond the A.A.S. degree requirements are offered to enable a student to acquire advanced technical knowledge and skills. If a student chooses to pursue a baccalaureate degree in the College of Applied Sciences and Arts' Advanced Technical Studies Division, the 300 level Tool and Manufacturing Technology classes can be a part of this curriculum.

Students in tool and manufacturing technology should expect to spend about \$150 for instruments, tools, and supplies.

Representatives of industry and education form an Advisory Committee which helps to keep the program responsive to the needs of the manufacturing field. Representatives from industry include: McDonnell Douglas Co.; Carbondale Belcan Tooling Center; Maytag Co.; Coal Age Service Corporation; Multiplex Display Fixture Co.; Olin Corporation, East Alton; Department of Technology, SIUC; and G. M. Metal Centers Operations, Pontiac, MI.

The associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, College of Applied Sciences and Arts

TOOL AND MANUFACTURING TECHNOLOGY MAJOR – MACHINE TOOL (COMPUTER AIDED MACHINING) SPECIALIZATION

English 101	3
Social Science Elective	3
Speech Communication 101 or English 102	3
Information Management Systems 125, Applied Sciences and Arts 126	8
Tool and Manufacturing Technology 101, 102, 125, 126, 185, 186, 208, 210, 211, 220, 221, 225, 275, 276	53
Total	70

Machine Tool Specialization Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
ASA 126	-	4	SPCM 101 or ENGL 102	3	-
ENGL 101	-	3	Soc Science	-	3
IMS 125	4	-	TT 208	3	-
TT 101, 102	6	6	TT 210, 211	7	7
TT 125, 126	3	3	TT 220, 221	3	3
TT 185, 186	3	3	TT 275, 225	2	2
			TT 276	-	2
Total	16	19	Total	18	17

TOOL AND MANUFACTURING TECHNOLOGY MAJOR – METAL FABRICATION AND PROCESSES SPECIALIZATION

English 101	3
Social Science Elective	3
Speech Communication 101 or English 102	3
Information Management Systems 125, Applied Sciences and Arts 126	8
Tool and Manufacturing Technology 101, 102, 125, 126, 180, 181, 182, 183, 185, 225, 275, 276, 310	50
Total	67

Metal Fabrication/Processes Specialization Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
ENGL 101.....	-	3	Soc Science	-	3
IMS 125.....	-	4	ASA 126.....	4	-
TT 101, 102.....	6	6	TT 182.....	3	-
TT 125, 126.....	3	3	TT 183.....	2	-
TT 180, 181.....	3	3	TT 225.....	-	2
TT 185.....	3	-	TT 275, 276	2	2
			TT 310.....	7	5
			ENGL 102 or SPCM 101	-	3
Total	15	19	Total	18	15

TOOL AND MANUFACTURING TECHNOLOGY MAJOR – TOOL DESIGN SPECIALIZATION

English 101	3
Social Science Elective	3
Speech Communication or English 102	3
Information Management Systems 125, Applied Sciences and Arts 126	8
Tool and Manufacturing Technology 101, 102, 125, 126, 180, 185, 186, 208, 225, 230, 231, 240, 241, 275, 276	52
Total	69

Tool Design Specialization Suggested Curriculum Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
ASA 126.....	-	4	SPCM 101 or ENGL 102	-	3
ENGL 101.....	-	3	TT 208.....	3	-
IMS 125.....	4	-	TT 225.....	-	2
TT 101, 102.....	5	5	TT 230, 231	6	6
TT 125, 126.....	6	-	TT 240, 241	3	3
TT 180.....	-	3	TT 275, 276	2	2
TT 185, 186.....	3	3	Soc Science Core.....	3	-
Total	18	18	Total	17	16

¹Student may take only one history course to satisfy this requirement²Students may take one course from groups 1 and 2 or may select a sequence in History, Philosophy or English.

College of Applied Sciences and Arts Faculty

Applied Arts

Bramlet, James E., Assistant Professor, Commercial Graphics-Design, M.A., Western Illinois University, 1970.

Davey, Jon, Associate Professor, Architectural Studies, M.S., Southern Illinois University, 1987.

Davis, L. Noel, Assistant Professor, *Emeritus*, Architectural Studies, B.S., University of Illi-

nois, 1948.

DeMattei, Michael, Lecturer, Construction Technology, M.S., Southern Illinois University Carbondale, 1993.

Dobbins, John, Assistant Professor, Architectural Studies, M. Arch., University of Illinois, 1986.

Frisch, Scott, Visiting Lecturer, Architectural Studies, M.S.Ed., Southern Illinois University at Carbondale, 1994.

Gimenez, Atilio M., Assistant Professor, Architectural Studies, M. Arch., University of Buenos Aires, 1964.

Hays, Denny M., Associate Professor, Interior Design, M. Arch., University of Utah, Salt Lake City, 1971.

Heckman, Thad, Visiting Assistant Instructor, Architectural Studies, B.A., Southern Illinois University at Carbondale, 1979.

Lach, Norman, Assistant Professor, Architectural Studies, M.Arch., University of Illinois, 1974.

Ladner, Joel Brooks, Associate Professor, Architectural Studies, M.Arch., University of Houston, 1984.

LaGarce, Melinda, Assistant Professor, Interior Design, M.F.A., Texas Technology University, 1972.

Little, Harold E., Associate Professor, *Emeritus*, B.S., Pennsylvania State University, 1951.

Mailloux, Lawrence O., Assistant Professor, *Emeritus*, Commercial Graphics-Design, B.F.S., Rhode Island School of Design, 1947.

Miller, Craig A., Visiting Lecturer, Architectural Studies, M. Arch., University of Illinois, 1993.

Miller, Kevin R., Visiting Assistant Instructor, B.A., Melbourne, 1984.

Murray, Chad R., Visiting Lecturer, Commercial Graphics-Design, M.S., Murray State, 1992.

Osborn, Harold W., Assistant Professor,

Emeritus, Construction Technology, M.S.Ed., Southern Illinois University, 1960.

Owens, Terry A., Associate Professor and Chair, Applied Arts, M.S., Southern Illinois University at Carbondale, 1984.

Poggas, Christy, Assistant Professor, Architectural Studies, M.S.Ed., Southern Illinois University at Carbondale, 1990.

Rutledge, Clifton D., Associate Professor, *Emeritus*, M. Arch., Kansas State University, 1968.

Smith, Peter B., Visiting Assistant Professor, Interior Design, M. Arch., University of Illinois, 1980.

Tully, Timothy R., Assistant Professor, Interior Design, M.S., Southern Illinois University at Carbondale, 1990.

Van Hurley, Vickie L., Visiting Assistant Instructor, Commercial Graphics-Design, B.A., Albion College, 1987.

Walker, Gregory, Lecturer, Construction Technology, B.S., Southern Illinois University at Carbondale, 1985.

Wessel, Stewart P., Assistant Professor, Architectural Studies, M.F.A., University of North Texas, 1992.

White, David J., Assistant Professor, Commercial Graphics-Design, M.S.Ed., Southern Illinois University at Carbondale, 1991.

White, Robert, Associate Professor, *Emeritus*, M.S., Southern Illinois University at Carbondale, 1962.

Yack, John L., Associate Professor, *Emeritus*, Commercial Graphics-Design, M.F.A., University of Oklahoma, 1959.

Applied Technologies

Beauchamp, Clarence, Assistant Professor, *Emeritus*, M.S., University of Wisconsin, Stout, 1949.

Behrmann, Michael, Assistant Professor, Automotive Technology, M.S.Ed., Southern Illinois University at Carbondale, 1995.

Cash, Joe R., Associate Professor, Automotive Technology, M.S.Ed., Southern Illinois University at Carbondale, 1970.

Collard, Rodney, Assistant Professor, Automotive Technology, M.S.Ed., Southern Illinois University at Carbondale, 1990.

Crenshaw, J. Howard, Instructor, *Emeritus*, Mathematics and Science, M.S., University of Illinois, 1940.

Ferketich, Gregory, Lecturer, Tool and Manufacturing Technology, M.A., California State University, 1989.

Gilbert, David W., Assistant Professor, Automotive Technology, M.S., Oklahoma State University, 1981.

Greer, Jack, Assistant Professor, Automotive Technology, B.S., Southern Illinois University at Carbondale, 1974.

Harbison, James L., Instructor, *Emeritus*, Mathematics and Science, M.S., University of Illinois, 1940.

Jeralds, Lawrence E., Assistant Professor,

Automotive Technology, M.S., Southern Illinois University at Carbondale, 1988.

Jones, Paul, Instructor, *Emeritus*, Automotive Technology.

Kazda, Joseph G., Assistant Professor, Automotive Technology, M.S.Ed., Southern Illinois University at Carbondale, 1965.

Lampman, Duncan, Associate Professor, *Emeritus*, Construction Technology and Tool and Manufacturing Technology, M.S.Ed., Southern Illinois University at Carbondale, 1956.

Lappin, Michael J., Visiting Assistant Instructor, Tool and Manufacturing Technology, B.S., Southern Illinois University at Carbondale, 1993.

Morris, Michael, Instructor, Automotive Technology, B.S., Southern Illinois University at Carbondale, 1991.

Romack, Charles, Assistant Professor, Automotive Technology, B.S., Southern Illinois University at Carbondale, 1965.

Sanders, Eugene, Assistant Professor, Tool and Manufacturing Technology, B.S., Southern Illinois University at Carbondale, 1956.

Schultz, James R., Instructor, Tool and Manufacturing Technology, B.S., Southern Illinois University at Carbondale, 1982.

Simpson, Jerry, Assistant Professor, *Emeritus*, Automotive Technology, M.S., Colorado State University, 1966.

Soderstrom, Harry R., Professor, *Emeritus*, Tool and Manufacturing Technology, M.S., Bradley University, 1952.

Traylor, George Lelon, Associate Professor, *Emeritus*, Tool and Manufacturing Technology, M.S.Ed., Southern Illinois University at

Carbondale, 1965.

Tregoning, Philip, Assistant Professor, Tool and Manufacturing Technology, *Emeritus*, M.S.Ed., Southern Illinois University at Carbondale, 1965.

White, James E., Assistant Professor and Chair, Applied Technologies, B.S.Ed., Southern Illinois University at Carbondale, 1961.

Aviation Management and Flight

Baumgardner, Barbara, Visiting Assistant Professor, M.P.A., Golden Gate University, 1989.

Biggs, V. Eugene, Assistant Professor, M.S., Southern Illinois University at Carbondale, 1971.

Bowman, Terry S., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1993.

Falkenberry, W. A., Visiting Assistant Professor, *Emeritus*, M.S., Southern Illinois University, 1980.

Kaps, Robert W., Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1996.

Kmiecik, Kip, Lecturer, B.S., Southern Illinois University at Carbondale, 1987.

Martinez, Richard, Lecturer, B.S., California State University at Los Angeles, 1983.

Mortag, Keith, Assistant Instructor/Charter Pilot, B.S., Southern Illinois University at Carbondale, 1989.

NewMyer, David, Associate Professor and Chair, Aviation Management and Flight, Ph.D., Southern Illinois University at Carbondale, 1987.

Ruiz, Jose, Assistant Professor, M.A.S., Embry-Riddle Aeronautical University, 1986.

Sharp, Susan, Assistant Professor, M.E., Northeast Louisiana University, 1983.

Thiesse, James, Assistant Professor, *Emeritus*, Ed.D., Auburn University, 1980.

Voges, John K., Visiting Lecturer, B.A., Sangamon State University, 1988.

Widick, Leland, Assistant Professor, M.A., Southern Illinois University at Carbondale, 1994.

Wohlheuter, James A., Visiting Lecturer, B.S., University of Michigan, 1974.

Worrells, David, Assistant Professor, M.A.M. Embry-Riddle Aeronautical University, 1985.

Aviation Technologies

Birkhead, Larry M., Assistant Professor, *Emeritus*, M.S., Southern Illinois University at Carbondale, 1986.

Cannon, Richard H., Assistant Professor, *Emeritus*, B.S., Southern Illinois University at Carbondale, 1982.

Cotter, John D., Assistant Professor, M.S.Ed., Southern Illinois University at Carbondale, 1988.

Kolkmeier, Robert O., Associate Professor, M.S.Ed., Southern Illinois University at Carbondale, 1971.

Milton, William C., Assistant Professor, M.S., Southern Illinois University at Carbondale, 1986.

Most, Michael T., Assistant Professor, M.A., Central Washington University, 1974.

O'Brian, Benjamin H., Assistant Professor, *Emeritus*, M.S., Southern Illinois University at Carbondale, 1985.

Ohman, Lennart R., Assistant Professor, B.S., University of Illinois, 1964.

Rodriguez, Charles L., Assistant Professor, M.S.Ed., Southern Illinois University at Carbondale, 1987.

Russell, Lewis G., Assistant Professor, M.S.Ed., Southern Illinois University at Carbondale, 1978.

Sanders, Robert F., Assistant Professor, M.S.Ed., Southern Illinois University at Carbondale, 1986.

Schafer, Joseph A., Associate Professor, B.S., Lewis College, 1960.

Staples, Laurence C., Assistant Professor and Chair, B.S., Southern Illinois University at Carbondale, 1975.

Verner, Gerry D., Assistant Professor, B.S., Southern Illinois University at Carbondale, 1973.

Health Care Professions

Adams, Deborah K., Visiting Assistant Professor, M.A., Southern Illinois University at Carbondale, 1983.

Aubertin, Mary A., Assistant Professor, Dental Hygiene, DMD., Washington University School of Dental Medicine, 1988.

Beaver, Shirley, Associate Professor, Dental Hygiene, RDH, Ph.D., Southern Illinois University at Carbondale, 1995.

Callaghan, Mary E., Assistant Professor, *Emerita*, Dental Hygiene, R.D.L., M.A., University of San Francisco, 1962.

Cittadino, Dominic, Adjunct Associate Professor, Dental Hygiene, DDS.

Clark, Cindy, Visiting Instructor, Dental Hygiene, RDH, M.S., Mankato State University, 1991.

Craven, M. Joyce, Assistant Professor, Health Care Management, Ph.D., Southern Illinois University at Carbondale, 1988.

DeMattei, Ronda, Assistant Professor, Dental Hygiene, RDH, M.S., Southern Illinois University at Carbondale, 1986.

Elliott, J. Roy, Associate Professor, *Emeritus*, Dental Hygiene, RDH, D.D.S., University of Tennessee, 1953; M.S., Ohio State College of Dentistry, 1962.

Grace, Linda M., Associate Professor, Health Care Management, Ph.D., Southern Illinois University at Carbondale, 1985.

Grey, Michael, Assistant Professor, Radiologic Technology, RT(R), M.S., Southern Illinois University at Carbondale, 1991.

Griffith, Cydney A., Assistant Professor, Mortuary Science and Funeral Services, M.S., Southern Illinois University at Carbondale, 1991.

Hall, James E., Visiting Assistant Professor, Health Care Management, M.A., Bowie State University, 1992.

Hees, Alice Jane, Assistant Professor, Health Care Professions, RN, Ph.D., Southern Illinois University at Carbondale, 1991.

Heischmidt, Cynthia Jo, Associate Professor, Dental Hygiene, RDH, Ph.D., Southern Illinois University at Carbondale, 1991.

Hertz, Donald G., Associate Professor, *Emeritus*, Mortuary Science and Funeral Service, Ed.M., University of Oklahoma, 1953.

Holland, Susan, Assistant Professor, Respiratory Therapy, RRT, M.A., University of Manitoba, 1973.

Ijams, Kayleonne, Assistant Professor, Dental Technology, CDT, M.S., Southern Illinois University at Carbondale, 1980.

Jefferies, Dan P., Assistant Professor, Dental Hygiene, RDH, M.S., University of North Carolina, 1986.

Jensen, Steven, Associate Professor, Radiologic Technology, RT(R), Ph.D., Southern Illinois University at Carbondale, 1987.

Laake, Dennis J., Associate Professor, Dental Technology, CDT, M.S.Ed., Southern Illinois University at Carbondale, 1973.

Lautar, Charla, Assistant Professor, Dental Hygiene, RDH, University of Calgary, 1995.

Lukes, Sherri M., Visiting Instructor, Dental Hygiene, RDH, B.S., Southern Illinois University at Carbondale, 1984.

Maurizio, Sandra J., Visiting Instructor, Dental Hygiene, RDH, M.S., Southern Illinois University at Carbondale, 1993.

McMurry, William S., Visiting Associate Professor, *Emeritus*, Dental Hygiene, D.D.S., University of Missouri, 1950.

Milkevitch, Joseph, Visiting Assistant Professor, *Emeritus*, Health Care Management, M.B.A., Golden Gate University, 1982.

Morgan, Frederic L., Associate Professor and Chair, Health Care Professions, Ed.D., Ball State University, 1969.

Okita, Ted Y., Professor, *Emeritus*, Physical Therapist Assistant, RPT, M.A., Northwestern University, 1964.

Paulk, Marilyn, Assistant Professor, Dental Hygiene, RDH, M.S., Southern Illinois University at Carbondale, 1987.

Pearson, Stanley, Assistant Professor, Respiratory Therapy, RRT, M.S., Southern Illinois University at Carbondale, 1986.

Rogers, Janet L., Assistant Professor, Physical Therapist Assistant, Ph.D., Southern Illinois University at Carbondale, 1995.

Shaw, Thomas, Assistant Professor, Mortuary Science and Funeral Service, M.B.A., Amber University, Garland, Texas, 1990.

Szekely, Rosanne, Assistant Professor, Radiologic Technology, RT(R), M.S., Southern Illinois University at Carbondale, 1995.

Tiebout, Leigh, Assistant Professor, Dental Technology, CDS, M.S., Southern Illinois University, 1988.

Turnage, Virginia, Visiting Assistant Professor, M.S., Memphis State University, 1992.

VanStone, Christina, Visiting Instructor, Dental Hygiene, RDH, B.S., Southern Illinois University at Carbondale, 1994.

Vitello, Elaine M., Professor and *Dean*, Ph.D. Southern Illinois University, 1977.

Weltscheff, William K., Visiting Assistant Professor, Dental Hygiene, D.D.S., University of Missouri-Kansas City, 1976.

Westphal, Dwight, Assistant Professor, Dental Technology, CDT, B.S., Southern Illinois University at Carbondale, 1977.

Winings, John R., Associate Professor, Dental Technology, M.A., Governors State University, 1972.

Zacharie, Ngoyi Bukonda, Assistant Professor, Health Care Management, Ph.D., University of Minnesota, 1994.

Information Management Systems

Ashworth, Edwin Robert, Assistant Professor, *Emeritus*, Ph.D., Southern Illinois University, 1972.

Caldwell, Paul N., Associate Professor, *Emeritus*, M.S.Ed., Southern Illinois University at Carbondale, 1965.

Cook, F. Roger, Assistant Professor, *Emeritus*, M.S., Southern Illinois University at Carbondale, 1987.

Davis, Diane, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1990.

Devenport, William R., Assistant Professor, M.S., Illinois State University, 1985.

Dotson, Michael, Assistant Professor, M.S., Southern Illinois University at Carbondale, 1986.

Einig, Raymond G., Jr., Assistant Professor, M.S., St. Louis University, 1962.

Ellner, Jack R., Professor, *Emeritus*, Ph.D., New York University, 1969.

Evans, Candy Duncan, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1992.

Fisher, Valerie, Assistant Professor, M.S., Southern Illinois University at Carbondale, 1975.

Gonzenbach, Nancy, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1990.

Hampton, Robbye Joanna, Assistant Professor, *Emerita*, M.S., Southern Illinois University at Carbondale, 1965.

Harre, Paul A., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1995.

Henry, Janice Schoen, Associate Professor and *Chair*, Ph.D., Southern Illinois University at Carbondale, 1987.

Hudson, Shirley A., Assistant Professor, M.S., Southern Illinois University at Carbondale, 1988.

Jeralds, Lawrence E., Assistant Professor, M.S., Southern Illinois University at Carbondale, 1988.

Kearney, Brian, Assistant Professor, M.S., Southern Illinois University at Carbondale, 1990.

Keim, William, Visiting Professor, *Emeritus*, Ed.D., University of Southern California, 1969.

Morgan, Barbara, Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1992.

Morse, H. Pauletta, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1989.

Novak, Mary Ann, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1987.

Payne, Michael A., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1992.

Rehwaldt, Susan S., Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1982.

Richey, Helen E., Assistant Professor, *Emerita*, M.S., Southern Illinois University at Carbondale, 1953.

Sheets, Joyce, Associate Professor, M.S., Southern Illinois University at Carbondale, 1985.

Sheets, Leslie P., Associate Professor, M.S., Southern Illinois University at Carbondale, 1976.

Shin, Wangshik, Associate Professor, M.S., Southern Illinois University at Carbondale, 1963.

Shupe, William G., Associate Professor, M.S., Southern Illinois University at Carbondale, 1977.

Stanley, Charles R., Assistant Professor, *Emeritus*, M.S., University of Houston, 1976.

Stitt, Beverly A., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1980.

Tregoning, Elizabeth, Lecturer, B.S., University of Illinois, 1979.

Vaughn, F. Eugene, Associate Professor, *Emeritus*, M.S.Ed., Southern Illinois University at Carbondale, 1961.

Wolfson, Ruth Ann, Lecturer, B.S., Eastern Illinois University, 1976.

Woolard, Linda, Assistant Professor, M.S., Southern Illinois University at Carbondale, 1984.

Technical and Resource Management

Armstrong, Connie J., Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1989.

Clarke, David S., Professor, Ph.D., California University for Advanced Studies, 1986.

Graziano, Joseph R., Assistant Professor, M.S., Eastern Kentucky University, 1971.

Hertz, Vivienne, Associate Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1980.

Hoffman, Nancy L., Visiting Instructor, *Emerita*, M.S., Southern Illinois University at Carbondale, 1969.

Horton, John B., Visiting Assistant Professor, *Emeritus*, M.Ed., Clemson University at Carbondale, 1972.

Isberner, Fred R., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1984.

Laedtke, Ralph, Visiting Assistant Professor, *Emeritus*, M.A., Webster College, 1977.

Magney, John, Assistant Professor, Ph.D., University of Michigan at Ann Arbor, 1977.

Novick, Jehiel, Assistant Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1970.

Richard, Harold, Associate Professor, *Emeritus*, Ed.D., Pennsylvania State University, 1976.

Robb, James A., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1974.

Troutt-Ervin, Eileen, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1986.

Walton, Gary, Visiting Assistant Professor, M.A., Webster College,

Yates, Loyd, Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1981.

College of Business and Administration

Thomas L. Keon, *Dean*

Departments: Finance; Management; Marketing
School: Accountancy

The College of Business and Administration aims to prepare students to perform successfully in business and other organizations such as government and other not-for-profit organizations functioning within a changing social, economic, and political environment. Study provides the student with fundamental principles and practices of organizational behavior and allows the mastering of knowledge and skills for effective management. The curriculum provides a broad base for understanding business while simultaneously allowing in-depth study within an area of concentration. Students find that the professional education they receive in the college is desired by business, governmental units, and other public institutions. The advanced curriculum and related programs provide students not only with a meaningful education but also with a means of relating that education to organizations and commerce.

The College of Business and Administration offers the following majors leading to the Bachelor of Science degree.

Accounting	Business Economics	Management
Business and	Finance	Marketing
Administration		

All programs offered in the College of Business and Administration are accredited by the American Assembly of Collegiate Schools of Business.

The College of Business and Administration offices are located in Henry J. Rehn Hall; the classes are conducted in various buildings throughout the campus.

Pre-College Preparation

High school and preparatory school students are urged to follow a program which includes at least four units of English and three units of mathematics, with a substantial portion of the remainder of their study programs devoted to such academic subject areas as humanities, the sciences, and social studies.

Transferred Credits in Business Courses

Subject to the policies of the University and of the American Assembly of Collegiate Schools of Business regarding acceptance of transferred credits, the college accepts college-level credit earned in business and economics courses from accredited two- or four-year institutions of higher education and counts such credit toward the 120 semester hours required for graduation. However, if such courses are offered at the lower division (freshman and sophomore level) at the institution where completed, only those courses shown below will be treated as equivalencies to college- or departmental-required courses.

Subject	Hours
Principles of accounting	6
Economic principles	6
Business economics statistics	3
(where college algebra is a prerequisite)	
Basic computer course ¹	3
Legal and social environment of business	3

¹Computer coursework completed at other universities and colleges will be accepted as transfer credit for the College of Business and Administration core computer requirement if that course has been approved as an equivalent course by the College of Business and Administration.

Students also have the opportunity of validating additional coursework and nothing in the above statement abridges a student's right to satisfy graduation requirements by proficiency (or competency) examinations. Such examinations are treated as a student right by the college and are available for most courses.

Admission Policy

The College of Business and Administration admission policy shall be the same as that of the University. All qualified new students are admitted to the College of Business and Administration with a specific departmental major classification or as an unclassified student.

Reentering and Southern Illinois University at Carbondale Students. Students who are currently enrolled or were previously enrolled at the University in a major outside the College of Business and Administration may request admission to a Business program. These students will be considered for admission to the College of Business and Administration provided that they are in good standing with the University.

International Students. International students must meet admission requirements comparable to those of native students. While admission credentials such as ACT and class rank are generally not submitted by international students, applicants do submit credentials which reflect their achievement in some subject areas similar to those of the United States students. Therefore, beginning international freshmen as well as transfer students will have their applications and documents reviewed in a manner similar to domestic students for admission to the College of Business and Administration.

Grade Point Average Calculation. In calculating a student's grade point average for admission purposes for continuing, new, and reentering students, the admission office will follow the SIUC grading policy and procedures for all collegiate (not remedial) work attempted at SIUC and other collegiate institutions.

Retention Policy, Collegiate Warning and Dismissal Policy for Students Who Were Admitted to the College Prior to Summer 1990

Students who were admitted to the College prior to Summer 1990 must meet the following requirements:

In order to continue enrollment in the College of Business and Administration, students must maintain a 2.2 Southern Illinois University at Carbondale cumulative grade point average. Students must also complete the following nine courses with an overall C average, before attaining junior status (56 semester hours). It is also necessary for students to have completed with a grade of C or better seven of these nine courses. The nine retention courses or the equivalencies are English 101; Psychology 102; Mathematics 139 and 140; Management/Accounting 208 and Economics 214 or 241; Accounting 220 and 230; and Computer Science 212 or Information Management Systems 229. Students who have completed 42 semester hours or more without completing at least six of the prescribed nine courses will be subject to termination from the college.

Collegiate Warning. Students who do not achieve an accumulative 2.20 Southern Illinois University at Carbondale grade point average in any semester or who fail to meet the retention course requirements as described above are subject to collegiate warning. Students who are on collegiate warning and do not earn a 2.20 Southern Illinois University at Carbondale grade point average in a subsequent semester will be placed on a status of collegiate dismissal.

A student who has been placed on collegiate dismissal will be transferred to Pre-Major Advisement or may seek transfer to another University program if the student has an overall Southern Illinois University at Carbondale grade point average of 2.0. Students who are placed on collegiate dismissal and have less than an overall 2.0 University grade point average for work completed at the University but have not been suspended from the University will be placed in Pre-Major Advisement.

First Collegiate Dismissal. The student on collegiate dismissal may not be readmitted to the college until the student has interrupted education in the college for a minimum of two semesters and shows evidence that the program of study can be successfully completed. For this purpose, a summer session will be considered a semester.

After the two term interruption, the student may apply to the college scholastic committee for readmission. In this petition, the student should supply written evidence to include: (1) any extraordinary circumstances that contributed to the collegiate dismissal; (2) why the student thinks there is a reasonable chance to succeed in studies; and (3) what the student was doing during the interruption period that will contribute to further success. Insufficient documentation to justify the request will result in denial of the request for that semester.

Business students on collegiate dismissal who are eligible to continue at the University may be readmitted in certain cases upon approval of the scholastic committee without the two semester interruption.

Second and Subsequent Dismissals. A student on collegiate dismissal for a second or subsequent time may apply for readmission after an interval of no less than two calendar years. There are no exceptions. Students requesting readmission who have been on dismissal two or more times must be referred to the scholastic committee as described above.

Admission to Business and Administration Classes. Students on collegiate dismissal who are eligible to continue at Southern Illinois University at Carbondale can take only those business courses that are **not** restricted to business majors. Students are not restricted from taking other required non-business courses.

Grade Point Average Requirement

Graduation from the College of Business and Administration requires achievement of a 2.00 grade point average in all business-prefix (ACCT, BUS, ECON, FIN, MGMT, MKTG) courses taken at Southern Illinois University at Carbondale. Accounting majors are subject to the additional requirement of achieving a grade of C or better in accounting-prefix (ACCT) courses completed at the University; Marketing majors must earn a C grade in all marketing courses that are taken to satisfy major requirements; and Finance majors must maintain a cumulative 2.00 grade point average in Finance prefix courses taken at SIUC. Business courses may be taken only three times. This is, if a course is failed, a student has two additional attempts to pass the course. Students may not repeat courses in which they have earned a grade of C or better.

Pass/Fail Policy of the College

Business majors may not register on a Pass/Fail basis for courses used to satisfy requirements in the College of Business and Administration unless the course is designated Mandatory Pass/Fail.

Course Sequencing

It is of the utmost importance that required courses be sequenced properly. Sequencing guides are available from the college's academic advisement center and are

published in the College of Business and Administration's *Student Handbook*. Courses on the 300 to 400 levels are reserved for juniors and seniors.

Forty Percent Rule

At least 50% of the coursework of all business majors must be devoted to courses offered outside the College of Business and Administration; at least 40%, to courses offered by the College of Business and Administration.

Multiple Majors in Business

Business majors may choose to complete two or more of the six majors offered by the college. While all requirements of each major must be satisfied, this can usually be accomplished through judicious use of electives without extending anticipated graduation dates beyond one semester. All majors will be noted on the diploma issued on completion of the Bachelor of Science degree.

University Core Curriculum Courses Prescribed for Business Majors

Students in the College of Business and Administration must complete the University Core Curriculum requirements. The following courses are required and will count toward partial fulfillment of these:

- Psychology 102
- Economics 241 to substitute for Economics 113 in the University Core
- English 101, 102
- Mathematics 139 to substitute for University Core Mathematics
- Speech Communication 101

Professional Business Core

The professional business core, required of all College of Business and Administration students, is comprised of the following courses:

Courses.....	Semester Hours
Accounting 220, 230	6
Business 402	1
Management 202, 208 ⁵ , 304, 318, 481	15
Computer Science 212/Information Management Systems 229 ²	3
Economics 241 ¹ , 240	(3) ¹ + 3
Finance 270 ³ , 330	6
Marketing 304	3
Mathematics 139 ¹ and 140 ⁴	(3) ¹ + 4
Total	41

¹See University Core Curriculum courses prescribed for business majors.
²Computer coursework completed at other universities and colleges will be accepted as transfer credit for the College of Business and Administration core computer requirement if that course has been approved as an equivalent course by the College of Business and Administration.
³The combination of Finance 280 and 380 may be substituted for 270.
⁴Mathematics 150 may be substituted for 140.
⁵Also listed as Accounting 208.

Accountancy (School)

Accounting is the process of identifying, measuring, and communicating economic information to permit informed judgments and decisions by users of the information. Such information is required and used by parties, both internal and external to a business, a not-for-profit organization, and other entities.

The curriculum is designed to prepare a student with basic conceptual accounting and business knowledge necessary to develop a foundation for accounting career development. The curriculum consists of three segments, each designed for a specific purpose. The University Core Curriculum segment is designed to develop students' capacity for inquiry, abstract logical thinking, and critical analysis. A knowledge of humanities, arts, sciences, and general literacy which includes writing, reading, speaking, and listening provides the broad knowledge base and skills upon which to build professional study. The second segment provides general business and professional accounting education. The primary purpose of this segment is to provide students with the knowledge, sensitivities, and abilities all accountants should have for entry into the accounting profession and the capacity to apply these qualities under reasonable supervision. A broad systems orientation as well as a more specific professional accountancy orientation is developed within this segment. The third segment dealing with specialization is very limited at the undergraduate level. A student desiring to specialize in taxation, audit/systems, or other areas should consider graduate study through a fifth year and the Master of Accountancy degree. The five year sequence is required for CPA examination purposes by the AICPA and most states, including Illinois and Missouri.

Accounting majors must achieve a 2.0 grade point average in accounting prefix courses taken at Southern Illinois University at Carbondale, as well as meet the College of Business and Administration's graduation requirement of 2.00 grade point average in business-prefix courses taken at Southern Illinois University at Carbondale. In addition they must also achieve a grade of C or better in upper-level accounting-prefix courses taken at Southern Illinois University at Carbondale offered to satisfy the requirements of the major in accounting. The School of Accountancy enforces all prerequisites for accounting prefix courses which may in some cases include a grade higher than C.

Accounting (Major, Courses)

Bachelor of Science Degree, College of Business and Administration

University Core Curriculum Requirements	41
Professional Business Core (See above)	41
Requirements for Major in Accounting	24
Accounting 321, 322 and 421 (financial)	9
Accounting 331 (managerial)	3
Accounting 341 (tax)	3
Accounting 361 (auditing)	3
Accounting 451 (systems)	3
Accounting 431 (advanced cost), 441 (advanced tax) or 495 (internship)	3
Electives	14
Electives (outside of Accounting)	5
Electives (outside of Business)	6
English 291	3
Total	120

Accounting Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
ENGL 101, 102.....	3	3	ACCT 220, 230.....	3	3
UCC Science	3	3	ECON 241, 240.....	3	3
UCC Fine Arts.....	3	-	ACCT/MGMT 208.....	3	-
PSYC 102.....	-	3	CS 212 or IMS 229.....	-	3
UCC Humanities	3	-	UCC Humanities.....	3	-
UCC Human Health.....	-	2	MGMT 202.....	-	3
MATH 139, 140	3	4	SPCM 101.....	3	-
			UCC Integrative Studies	-	3
<i>Total</i>	15	15	<i>Total</i>	15	15
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
ACCT 321, 322.....	3	3	ACCT 361 or 451	3	3
ACCT 331, 341.....	3	3	ACCT 421.....	3	-
MGMT 304.....	3	-	ACCT 431, 441, or 495.....	-	3
FIN 330.....	-	3	MGMT 318, 481	3	3
UCC Integrative Studies	3	-	FIN 270 ² (or FIN 280/380 opt)	3	-
MKTG 304.....	-	3	Approved Elective ¹ (or Fin		
ENGL 291.....	3	-	380 ²).....	-	3
BUS 402.....	-	1	Approved Elective ¹	3	3
Approved Elective ¹	-	2			
<i>Total</i>	15	15	<i>Total</i>	15	15

¹120 semester hours are required for graduation. Approved electives should be selected in consultation with academic advisor to meet this requirement.

²The combination of Finance 280 (Business Law I) and Finance 380 (Business Law II) may be substituted for Finance 270 and is highly recommended for Accounting majors.

Minor

A minor in Accounting consists of a minimum of 15 semester hours, including Accounting 220, 230 and nine credit hours in Accounting at the 300 level or above. All prerequisites for these classes must also be satisfied. At least nine of the fifteen semester hours must be taken at Southern Illinois University at Carbondale. An advisor within the College of Business and Administration must be consulted before selecting this field as a minor.

Accounting Faculty

Barbeau, Debra J., Lecturer, M.Acc., Southern Illinois University, 1985.

Basi, Bartholomew A., Professor, *Emeritus*, C.P.A., J.D., D.B.A., Indiana University, 1971.

Burger, Clifford R., Professor, *Emeritus*, C.P.A., M.S., Indiana State University, 1947.

Dwyer, Peggy D., Associate Professor, Ph.D., University of Missouri, 1988.

Gribbin, Donald W., Associate Professor, C.P.A., Ph.D., Oklahoma State University, 1989.

Hahn, Randall, Associate Professor, C.P.A., D.B.A., University of Kentucky, 1984.

Karnes, Allan, Associate Professor, *Director*, C.P.A., M.A., J.D., Southern Illinois University, 1986.

King, James B., II, Associate Professor, C.P.A., Ph.D., Indiana University, 1987.

Lumbattis, Cathy, Lecturer, C.P.A., M.B.A., Southern Illinois University at Edwardsville, 1975.

Masoner, Michael, Associate Professor, C.P.A., Ph.D., University of Minnesota, 1975.

Rivers, Richard A., Associate Professor, C.P.A., D.B.A., Kent State University, 1976.

Schmidlein, Edward J., Jr., Professor, *Emeritus*, C.P.A., Ph.D., New York University, 1953.

Sobery, Julie S., Associate Professor, C.P.A., Ph.D., St. Louis University, 1982.

Swick, Ralph D., Professor, *Emeritus*, C.P.A., D.B.A., Indiana University, 1954.

Tucker, Marvin W., Professor, *Emeritus*, Ph.D., University of Alabama, 1966.

Wacker, Raymond F., Associate Professor, C.P.A., Ph.D., University of Houston, 1989.

Welker, Robert B., Professor, Ph.D., Arizona State University, 1976.

Wright, Roland M., Professor, *Emeritus*, C.P.A., Ph.D., University of Iowa, 1962.

Wu, Frederick H., Professor, *Emeritus*, Ph.D., Texas Tech University, 1975.

Business and Administration (Major, Minor)

The Bachelor of Science degree program with a major in business and administration is a college-wide degree which is intended for those students with personal and professional goals which cannot be met by one of the existing majors; i.e., accounting, business economics, finance, management, or marketing, available in the college and in addition have an interest in subject areas offered in other schools and colleges of the University. The program requires students to combine interests - business with an outside field - into a unique program. For example, a student with international business interest can combine business and administration with foreign languages; a student interested in going into the restaurant business can combine course work in food and nutrition with business and administration. The outside field, or secondary concentration, must be consistent with a specific career objective or personal development plan and at least 20 semester hours must be structured to achieve this objective. Individual programs are subject to the approval of the dean of the College of Business and Administration.

Bachelor of Science Degree, College of Business and Administration

University Core Curriculum Requirements	41
Professional Business Core (See above)	41
Requirements for Major in Business and Administration	20-23
Secondary concentration approved by the dean	
Business Prefix Electives	12
Approved Electives	3-6
To include one international business course	
Total	120

Business and Administration Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
ENGL 101, 102	3	3	ACCT 220, 230.....	3	3
UCC Science	3	3	ECON 241, 240	3	3
UCC Fine Arts.....	3	-	ACCT/MGMT 208	3	-
PSYC 102.....	-	3	CS 212 or IMS 229	-	3
UCC Humanities	3	-	UCC Humanities.....	3	-
UCC Human Health.....	-	2	MGMT 202.....	-	3
MATH 139	3	-	SPCM 101	3	-
MATH 140	-	4	UCC Integrative Studies	-	3
Total.....	15	15	Total	15	15
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
MGMT 304, 318.....	3	3	FIN 270 ²	3	-
FIN 330.....	3	-	MGMT 481	-	3
Secondary Concentration ³	3	6	Secondary Concentration ³	6	6
MKTG 304.....	3	-	Business-Prefix	6	-
Business Prefix	-	3	Business-Prefix (Intl Bus)	-	3
UCC Integrative Studies	3	-	Approved Elective	-	3
BUS 402	-	1			
Approved Elective ¹	-	2			
Total.....	15	15	Total	15	15

¹120 Semester hours are required for graduation. Approved electives should be selected in consultation with academic advisor to meet this requirement.
²The combination of Finance 280 (Business Law I) and Finance 380 (Business Law II) may be substituted for Finance 270 and is highly recommended for Accounting majors.
³Major option, Major specialization or Secondary concentration.

Minor

A minor in Business and Administration consists of a minimum of 15 semester hours, including Accounting 220, 230, Finance 330, Management 304 and Marketing 304. All prerequisites for these classes must also be satisfied. At least nine of the fifteen semester hours must be taken at Southern Illinois University at Carbondale. An advisor within the College of Business and Administration must be consulted before selecting this field as a minor.

Business Economics (Major)

The business economics major offered through the College of Business and Administration emphasizes the application of economic concepts and the use of critical analysis to the solution of economic and managerial problems.

This undergraduate program is an excellent general preparation for future managerial and staff assignments in a variety of business and public organizations. The program also prepares students for graduate study in economics as well as for the Master of Business Administration (MBA) degree.

Those students who desire professional careers as business and managerial economists are advised to plan to complete one to four years of postgraduate study.

Bachelor of Science Degree, College of Business and Administration

University Core Curriculum Requirements	41
Professional Business Core (See above)	41
Requirements for Major in Business Economics	21
Economics 340, 341	6
Finance 361 and 462 or 463	6
Three courses from the following list, two of which must be in economics:	9
Economics 310, 329, 330, 436, 443, 465	
Accounting 331, 341, 471	
Finance 331, 464	
Management 345, 352, 361	
Marketing 390, 435	
Approved Electives	17
To include one international business course.	
Total	120

Business Economics Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
ENGL 101, 102.....	3	3	ACCT 220, 230.....	3	3
UCC Science	3	3	ECON 241, 240	3	3
UCC Fine Arts.....	3	-	ACCT/MGMT 208.....	3	-
PSYC 102.....	-	3	CS 212 or IMS 229	-	3
UCC Humanities	3	-	UCC Humanities.....	3	-
UCC Human Health.....	-	2	MGMT 202	-	3
MATH 139, 140	3	4	SPCM 101	3	-
			UCC Integrative Studies	-	3
Total	15	15	Total	15	15

THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
MGMT 304, 318.....	3	3	Fin 270 ²	3	-
ECON 340, 341.....	3	3	MGMT 481.....	-	3
FIN 330, 361.....	3	3	ECON ³	3	3
MKTG 304.....	3	-	FIN 462 or 463.....	-	3
Approved Elective ¹	-	5	Major Option ³	3	-
UCC Integrative Studies ¹	3	-	Approved Elective ¹	6	3
BUS 402.....	-	1	International Business ¹	-	3
Total.....	15	15	Total.....	15	15

¹120 semester hours are required for graduation. Approved electives should be selected in consultation with academic advisor to meet this requirement.
²The combination of Finance 280 (Business Law I) and Finance 380 (Business Law II) may be substituted for Finance 270 and is highly recommended for Accounting majors.
³Major option, Major specialization or Secondary concentration.

Finance (Department, Major, Courses)

The financial implications of decisions in both business and government are daily becoming more complex. Within the firm, financial considerations permeate the concentrations of research, engineering, production, and marketing. Within governmental activities, sophisticated financial techniques are becoming increasingly important. The financial executive thus takes a key role in the successful management of both business and governmental operations.

The finance curriculum offers two areas of specialization to meet the varied interests of students: (1) financial management and (2) financial institutions. The financial management program provides the background for a career in the financial operations of business firms and public institutions. The financial institutions specialization is designed for those interested in the operations of financial intermediaries and financial markets. Certain courses may require the purchase of additional materials.

Finance majors must maintain a cumulative 2.00 grade point average in Finance prefix (FIN) courses taken at SIUC in addition to meeting all of the College of Business and Administration's retention and graduation requirements. Finance majors who fail for two consecutive semesters to maintain the 2.00 cumulative grade point average in Finance prefix courses will be required to drop Finance as their major.

Bachelor of Science Degree, College of Business and Administration

University Core Curriculum Requirements	41
Professional Business Core (See above)	41
Requirements for Major in Finance	21
Finance 331, 341, 361	9
Specialization (choose one)	12
Financial Institutions	
Finance 449; Select three: 320, 432, 433, 462	
or	
Finance 320; Finance 432 or 433; Select two: 321, 322, 323, 480	
Financial Management	
Finance 380 or upper division accounting course	
Select three: 432, 433, 462, 463, 464, 469	
Approved Electives	17
To include one international business course.	
Total	120

Finance Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
ENGL 101, 102.....	3	3	ACCT 220, 230.....	3	3
UCC Science	3	3	ECON 241, 240	3	3
UCC Fine Arts	3	-	ACCT/MGMT 208.....	3	-
PSYC 102.....	-	3	CS 212 or IMS 229	-	3
UCC Humanities	3	-	UCC Humanities.....	3	-
UCC Human Health.....	-	2	MGMT 202.....	-	3
MATH 139, 140	3	4	SPCM 101	3	-
<i>Total</i>	15	15	UCC Integrative Studies	-	3
			<i>Total</i>	15	15
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
MGMT 304, 318.....	3	3	FIN 270 ²	3	-
FIN 330, 331	3	3	MGMT 481	-	3
FIN 341, 361	-	6	FIN ³	6	6
MKTG 304.....	3	-	Approved Elective ¹	6	3
UCC Integrative Studies	3	-	International Business	-	3
Approved Elective ¹	3	2			
BUS 402	-	1			
<i>Total</i>	15	15	<i>Total</i>	15	15

¹ 120 semester hours are required for graduation. Approved electives should be selected in consultation with academic advisor to meet this requirement.

² The combination of Finance 280 (Business Law I) and Finance 380 (Business Law II) may be substituted for Finance 270 and is highly recommended for Accounting majors.

³ Major option, major specialization or secondary concentration.

Minor

A minor in Finance consists of a minimum of 12 semester hours, including Finance 330, 331, 341 and 361. All prerequisites for these classes must also be satisfied. An advisor within the College of Business and Administration must be consulted before selecting this field as a minor.

Finance Faculty

Cornett, Marcia M., Professor and Associate Dean, Ph.D., Indiana University, 1983.

Davids, Lewis E., Professor, *Emeritus*, Ph.D., New York University, 1949.

Davidson, Wallace N., III, Professor, Ph.D., Ohio State University, 1982.

Elsaid, Hussein H., Professor and Chair, Ph.D., University of Illinois, 1968.

Mathur, Iqbal, Professor, Ph.D., University of Cincinnati, 1974.

Musumeci, James, Assistant Professor, Ph.D., University of Texas at Austin, 1987.

Schwarz, Thomas V., Associate Professor, D.B.A., Florida State University, 1984.

Szakmary, Andrew C., Associate Professor, Ph.D., University of New Orleans, 1989.

Tyler, R. Stanley, Associate Professor, *Emeritus*, J.D., University of Illinois, 1952.

Vaughn, Donald E., Professor, *Emeritus*, Ph.D., University of Texas, 1961.

Waters, Gola E., Professor, J.D., University of Iowa, 1957, Ph.D., Southern Illinois University, 1970.

Management (Department, Major, Courses)

The Department of Management prepares students for careers in both profit and non-profit organizations in such fields as business and industry, government, education, and health. The curriculum places emphasis on the development of knowledge and skills necessary for effective problem solving and decision making to achieve the goals of the organization and manage resources effectively.

The curriculum prepares students through a variety of disciplines and offers valuable knowledge, tools, and techniques that provide a broad exposure to the key function of management. The courses, designed to impact technical, technological, and human resources management skills, prepare students to manage modern organizations successfully. A choice of four specializations within the management

major is available to students. They are management, entrepreneurship, management information systems and operations management.

Management. Administrators make and implement decisions through and with people working together toward the achievement of common societal, organizational, and personal goals. Understanding the organizational and environmental factors that influence individuals and groups, particularly in work settings, is critical to the success of managers and other employees. By carefully selecting courses, students can satisfy the general requirements of a management major, and orient their programs of study toward career tracks in general management, production-operations, management information systems, or personnel management. In each case, opportunities exist to pursue interests in administrative applications to a wider variety of organizational settings including government, health, and education, as well as small and large business.

Entrepreneurship. Entrepreneurship is the acceptance of risk in the management and direction of a venture. This specialization explores the special problems associated with the operation of an independent and often small business venture. Students may select courses relating to the special problems and techniques appropriate to the task of venture management in preparation for ownership and management roles in their own or a family business venture. By careful selection of courses from different areas of management, students can select the appropriate courses that will prepare them for their future positions in manufacturing, service, or retailing organizations. Research and consulting positions are also alternatives available to students with this specialization as well as the direction of new ventures for larger organizations.

Management Information Systems. With the onset of the information age, post-industrial organizations are increasingly rethinking their underlying organizational processes. Understanding how to manage information by effectively applying modern day information technology is recognized as one of the key antecedents to organizational effectiveness. There is a tremendous demand for individuals who can bridge the gap between the technological capabilities of modern day information technology and their application to a business context. By carefully selecting courses, students can prepare themselves for future positions related to management of information and information technology in service and manufacturing industries and the for-profit and not-for-profit sector. Students have the opportunity to seek employment opportunities with the rapidly growing consulting industry in the field as well.

Operations Management. In today's global competitive environment, organizations must efficiently manage the operations that produce goods and services so that customers are provided with products of high quality at a competitive price. As a result, companies look for individuals who can combine management skills with technological capabilities. This specialization is designed to prepare students for the CPIM certification examinations of the American Production and Inventory Control Society. At the same time, students will be well-prepared in modern operations techniques such as Total Quality Management, Business Process Reengineering, Just-in-Time and Manufacturing Resource Planning. Electives allow further study in computer-aided manufacturing and information technology.

Students majoring in other areas such as accounting, finance, or marketing can obtain a double major in management which will facilitate upward mobility in their careers.

Bachelor of Science Degree, College of Business and Administration

<i>University Core Curriculum Requirements</i>	41
<i>Professional Business Core (See above)</i>	41
<i>Requirements for Major in Management</i>	21
Specializations (Choose one)	
<i>Management.</i>	
Required: Management 341, 345, 352, 361, 431	
Elective: Select two from Management 385, 453, 456, 474, 483, 485.	
<i>Entrepreneurship.</i>	
Required: Management 350, 471, Finance 350, Marketing 350	
Electives: Select three from 341, 345, 361, 420, 421, 485, or an approved sequence such as insurance or real estate.	
<i>Management Information Systems.</i>	
Required: Management 341, 345, 352, 420, 421, 456	
Electives: Also select one of the following electives: Management 385, 453, 483, 485	
<i>Operations Management.</i>	
Required: Management 341, 345, 352, 483, Industrial Technology 475	
Electives: Select two from Management 420, 421, 456, Industrial Technology 445	
<i>Approved Electives</i>	17
To include one international business course.	
<i>Total</i>	120

Management Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
ENGL 101, 102.....	3	3	ACCT 220, 230.....	3	3
UCC Science	3	3	ECON 241, 240	3	3
UCC Fine Arts	3	-	ACCT/MGMT 208.....	3	-
PSYC 102.....	-	3	CS 212 or IMS 229	-	3
UCC Humanities	3	-	UCC Humanities.....	3	-
UCC Human Health.....	-	2	MGMT 202	-	3
MATH 139, 140	3	4	SPCM 101	3	-
			UCC Integrative Studies	-	3
<i>Total</i>	15	15	<i>Total</i>	15	15
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
MGMT 304, 318	3	3	FIN 270 ²	3	-
Specialization ³	-	9	MGMT 481	-	3
FIN 330	3	-	Specialization ³	6	6
MKTG 304.....	3	-	Approved Elective ¹	6	3
UCC Integrative Studies	3	-	International Business	-	3
Approved Elective ¹	3	2			
BUS 402	-	1			
<i>Total</i>	15	15	<i>Total</i>	15	15

¹120 semester hours are required for graduation. Approved electives should be selected in consultation with academic advisor to meet this requirement.

²The combination of Finance 280 (Business Law I) and Finance 380 (Business Law II) may be substituted for Finance 270 and is highly recommended for Accounting majors.

³Major option, Major specialization or Secondary concentration.

Minor

A minor in Management consists of a minimum of 15 semester hours, including Management 304, 318, 345 and six credit hours in Management at the 300 level or above. All prerequisites for these classes must also be satisfied. An advisor within the College of Business and Administration must be consulted before selecting this field as a minor.

Management Faculty

- Bateman, David N.**, Professor, Ph.D., Southern Illinois University, 1970.

Bedwell, R. Ralph, Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1969.

Bhattacharyya, Siddhartha, Assistant Professor, Ph.D., University of Florida, 1993.

Larson, Lars L., Associate Professor, *Emeritus*, Ph.D., University of Illinois, 1971.

Melcher, Arlyn J., Professor and *Chair*, Ph.D., University of Chicago, 1964.

McKinley, William, Associate Professor, Ph.D., Columbia University, 1983.

Nelson, Reed E., Associate Professor, Ph.D., Cornell University, 1983.

Ponce De Leon, Jesus, Assistant Professor, Ph.D., Indiana University, 1989.

Rai, Arun, Associate Professor, Ph.D., Kent State University, 1991.

Ramaprasad, Arkalqud, Professor, Ph.D., University of Pittsburgh, 1980.
- Sekaran, Uma**, Professor, *Emerita*, Ph.D., University of California at Los Angeles, 1977.

Stubbart, Charles I., Associate Professor, Ph.D., University of Pittsburgh, 1983.

Tadisina, Suresh, Associate Professor, Ph.D., University of Cincinnati, 1987.

Troutt, Marvin, Professor, Ph.D., University of Illinois at Chicago Circle, 1975.

Vicars, William M., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1969.

Westberg, William C., Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1948.

White, Gregory P., Associate Professor, Ph.D., University of Cincinnati, 1976.

Wilson, Harold K., Associate Professor, *Emeritus*, D.B.A., University of Colorado, 1972.

Marketing (Department, Major, Courses)

Marketing involves a system of interrelated activities used to develop, price, promote and distribute goods and services to customers, creating exchanges that satisfy individual and organizational goals. It is the marketing function that links the production of goods and services with their use. Effective marketing is essential to organizations in their efforts to achieve a competitive advantage that can be sustained. Without this, growth and survival of the organization are threatened.

The bachelor's degree program in marketing encompasses all of the key marketing functions. Graduates are fully equipped to take advantage of challenging and dynamic career opportunities in large and small businesses, in government, and in non-profit organizations. Careers in the field of marketing cut across many industries and involve a variety of organizations. Some of the career options open to the marketing major include industrial selling and sales management, retailing, advertising, marketing research, distribution, international marketing and marketing management.

A C or better grade is required for all marketing majors in all marketing courses taken to satisfy major requirements.

Bachelor of Science Degree, College of Business and Administration

University Core Curriculum Requirements	41
Professional Business Core (See above)	41
Requirements for Major in Marketing	24
Marketing 305, 329, 363, 390, 493	15
Marketing Electives	9
Approved Electives	14
Must include one international business course.	
Total	120

Marketing Suggested Curricular Guide

FIRST YEAR	FALL	SPRING
ENGL 101, 102.....	3	3
UCC Science	3	3
UCC Fine Arts	3	-
PSYC 102	-	3
UCC Humanities	3	-
UCC Human Health.....	-	2
MATH 139, 140	3	4

Total..... 15 15

THIRD YEAR	FALL	SPRING
MGMT 304, 318	3	3
MKTG 304, 305.....	3	3
FIN 330, 270.....	3	3
MKTG 390.....	-	3
UCC Integrative Studies	3	-
Approved Elective	3	2
BUS 402	-	1
Total.....	15	15

SECOND YEAR	FALL	SPRING
ACCT 220, 230.....	3	3
ECON 241, 240	3	3
ACCT/MGMT 208.....	3	-
CS 212 or IMS 229	-	3
UCC Humanities.....	3	-
MGMT 202	-	3
SPCM 101	3	-
UCC Integrative Studies	-	3

Total..... 15 15

FOURTH YEAR	FALL	SPRING
MKTG ³	6	3
MGMT 481	-	3
MKTG 329.....	3	-
MKTG 493	-	3
MKTG 363	3	-
International Business	-	3
Approved Elective ¹	3	3
Total.....	15	15

¹120 semester hours are required for graduation. Approved electives should be selected in consultation with academic advisor to meet this requirement.

²The combination of Finance 280 (Business Law I) and Finance 380 (Business Law II) may be substituted for Finance 270 and is highly recommended for Accounting majors.

³Major option, Major specialization or Secondary concentration.

Minor

A minor in Marketing consists of a minimum of 15 semester hours, including marketing 304, 305, 363 and six credit hours in Marketing at the 300 level or above. All pre-requisites for these classes must also be satisfied. Marketing 493, 495 and 499 may not be taken as part of the minor in Marketing. An advisor within the College of Business and Administration must be consulted before selecting this field as a minor.

Marketing Faculty

Adams, Kendall A., Professor, *Emeritus*, Ph.D., Michigan State University, 1962.

Andersen, R. Clifton, Professor, D.B.A., Indiana University, 1960.

Anderson, Carol H., Associate Professor, *Emerita*, Ph.D., Texas A & M University, 1981.

Balasubramanian, Siva, Associate Professor, Ph.D., State University of New York at Buffalo, 1986.

Bruner, Gordon C., II, Associate Professor, Ph.D., University of North Texas, 1983.

Dommermuth, William P., Professor, *Emeritus*, Ph.D., Northwestern University, 1964.

Fraedrich, John P., Associate Professor, Ph.D., Texas A & M University, 1988.

Grant, John A., Assistant Professor, Ph.D., Arizona State University, 1993.

Hindersman, Charles H., Professor, *Emeritus*, D.B.A., Indiana University, 1959.

King, Maryon F., Assistant Professor, Ph.D., Indiana University, 1989.

Lambert, Zarrel V., Professor and *Chair*, Ph.D., Pennsylvania State University, 1966.

Mathur, Lynette L., Assistant Professor, Ph.D., Ohio State University, 1990.

Moore, James Ray, Assistant Professor, *Emeritus*, Ph.D., University of Illinois, 1972.

Perry, Donald L., Associate Professor, Ph.D., University of Illinois, 1966.

Summey, John H., Associate Professor, Ph.D., Arizona State University, 1974.

College of Education

Nancy L. Quisenberry, *Interim Dean*

Departments: Curriculum and Instruction; Educational Administration and Higher Education; Educational Psychology and Special Education; Health Education and Recreation; Physical Education; Rehabilitation; Workforce Education and Development

The College of Education offers the following programs¹ leading to the Bachelor of Science degree:

Art	Mathematics
Biological Sciences	Music
Clothing and Textiles	Physical Education
Communication Disorders and Sciences	Political Science
Early Childhood	Recreation
Elementary Education	Secondary Education ²
English	Social Studies
French	Spanish
German	Special Education
Health Education	Workforce Education and Development
History	Zoology

¹In addition to programs offered almost entirely within the College of Education, certain programs are offered in cooperation with the College of Liberal Arts (e.g., English, art, music), or with the College of Agriculture and the College of Science (e.g., biological sciences, chemistry).
²This is not an academic major. Persons planning to teach in secondary schools should refer to Curriculum and Instruction program for a listing of academic majors and minors.

The College of Education is a multipurpose college preparing students as human service professionals as well as for the teaching profession. These programs include preparation in Apparel Design, Clothing Retailing, Child and Family Services, Athletic Training, Exercise Science and Physical Fitness, Recreation, Community Health, and Education, Training and Development.

Preparation of teachers at all levels and in all areas of instruction in the public schools from preschool education through high school is the special function of the College of Education. In its graduate offerings the efforts of the College of Education include professional work for prospective college teachers and administrators and several specializations in elementary and secondary school administration and supervision.

For most undergraduate students preparing to teach in high schools, the subject-matter courses will be taken in the other colleges and schools of the University, and the professional preparation for teaching, including student teaching, will be taken in the College of Education. Graduates of the College of Education receive the Bachelor of Science degree.

Students who wish to become principals or supervisors in the public schools take graduate work in the Department of Educational Administration and Higher Education. The department's major emphasis is on the graduate work, but it also participates in providing background for elementary and high school teachers. Likewise, students wishing to pursue a career in teaching or administration in colleges and universities take graduate work in the department. The department does not offer an undergraduate major in higher education, but it provides courses for undergraduate credit providing a broad background in higher education for elementary and high school teachers.

The College of Education, housed in the Wham Education Building, is the oldest unit of the University, which was originally chartered as Southern Illinois Normal University.

Teacher Education Program

Southern Illinois University at Carbondale is fully accredited by the National Council for Accreditation of Teacher Education (NCATE) and by the State Teacher Certification Board, Springfield. The teacher education program is an all-university function administered by the dean of the College of Education. An advisory committee composed of faculty, area teachers, and administrators serves in a recommending capacity to the dean.

Teacher education programs, approved by the State Teacher Certification Board, are offered in elementary education, early childhood education, special education, secondary education majors and minors, and in majors which lead to the special certificate to teach K-12. The special education major offers specializations in education of the behaviorally disordered, of the mentally retarded, and of the learning disabled.

Only those students who complete an approved teacher education program are recommended for certification and may receive a teaching certificate through the entitlement process. Further information and procedures for receiving the certificate are explained below under Certification.

ADMISSION POLICY

The College of Education admission policy shall be the same as that of the University. All qualified new students are admitted to the College of Education with a specific departmental major classification or as an undecided student. Students applying to the University for the Elementary Education program are first placed in Pre-Elementary Education. The same policy applies for reentering students and for students enrolled in Teacher Education Program majors in other colleges in the University.

RETENTION POLICY FOR TEACHER EDUCATION PROGRAM

This retention policy became effective August 15, 1993, and applies to all students enrolled at Southern Illinois University at Carbondale after August 15, 1993.

A total of 320 students will be admitted each year to the Teacher Education Program. One hundred and sixty students will be admitted on October 1 for enrollment in the teacher education sequence beginning the spring semester. One hundred and sixty students will be admitted on March 1 for enrollment in the teacher education sequence beginning fall semester.

Advancement to the teacher education certification program may occur when the student has completed a minimum of 30 semester hours. Pre-Elementary Education majors must meet conditions for admissions to the teacher education program as well as admission to the Elementary Education major. A student is eligible to make formal application for admission to the program when the following criteria have been met:

1. A minimum of 30 semester hours of completed work;
2. An overall grade point average of at least 2.50 (4.0 scale);
3. Completion of English 101 and 102 with a grade of C or better;
4. Three letters of recommendation from college or university faculty;
5. An ACT score of 18.

Applications must be submitted in person and must be accompanied by verification that all prerequisites have been met. Students are responsible for submitting test scores to the College of Education Student Services at the time of application. Applications received through the mail will not be considered. Application forms, as

well as information about the teacher education program, are available from the College of Education Student Services in Wham Education Building, room 135. Students are encouraged to investigate the feasibility of applying for a particular teaching field early in their undergraduate careers by contacting their adviser or the department in which they wish to specialize. Transfer students are encouraged to contact the College of Education Student Services at least one semester prior to enrolling at Southern Illinois University at Carbondale.

If a student's application is approved after being reviewed by the chief academic adviser in the College of Education, the student is issued a membership card which entitles the student to begin work in the basic professional education courses which are prerequisite to the professional semester of student teaching. Provisions for enrollment in Education 310:

1. Students who have not enrolled in and taken Education 310 within one year of being admitted to the Teacher Education Program will be dropped from the program. They must reapply to enroll in Teacher Education Sequence courses.
2. Students who wish to change majors after being admitted to the Teacher Education Program and prior to taking Education 310, must reapply in the new major and be admitted in the new major as of the date the major change was noted. Students who change their major after enrolling in Education 310 may have to take additional hours of Education 312 to meet the 100 clock hours in their major field.
3. Students may not enroll in Education 310 more than two times. After two failures, students must demonstrate through external experiences with children/youth of the age they plan to teach that they have the potential for a third placement. This will require at least one semester of external experience and written documentation from the head of the agency as well as from the person with whom they have had direct experience from the agency in which the experience was obtained.

At the end of the first semester of membership, the department offering the student's major is requested to submit a recommendation as to whether or not the student should be retained in the program. Criteria for this recommendation are available from the department or the student's adviser. Failure to obtain approval prohibits the student from continuing with the professional education courses and could lead to suspension from the program. In order to remain in the program and complete the requirements for graduation and teacher certification, the student must attain a 2.50 grade point average in the major and receive departmental approval. Both of these requirements must be met before final clearance can be given for a student teaching assignment.

Students who withdraw from student teaching for whatever reason will be told specifically what criteria they must meet to enroll in student teaching a second time. Students who cannot finish a second student teaching assignment will not be readmitted to student teaching.

Students who are not able to meet the criteria of the teacher education program or their major department will be counseled about alternative programs.

Collegiate Warning and Dismissal in Teacher Education Program. Students who do not achieve an accumulative 2.25 grade point average in their major in any semester are subject to collegiate warning. Students who are on collegiate warning and do not earn a 2.25 grade point average in courses required by their major in a subsequent semester will be placed in a status of collegiate dismissal. Students registered in other colleges who are in the Teacher Education Program who do not meet this requirement will be dismissed from the Teacher Education Program. A student who has been placed on collegiate dismissal may seek transfer to another program if the student has an overall grade point average at Southern Illinois University at Carbondale of 2.00 and is in good academic standing. Students who are placed on collegiate

dismissal and have less than an overall 2.00 for work completed at the University but have not been suspended from the University will be placed in Undergraduate Academic Services.

DEGREE REQUIREMENTS

In addition to the University Core Curriculum and major requirements, each degree candidate in a teacher education program must complete the course requirements listed below:

- 1. Two semester hours in health or physical education by taking Health Education 101 or Physical Education 101.
- 2. A total of 9 hours in American history, government (Political Science 114, History 110 recommended) and an approved non-western or third world culture course.
- 3. All University Core Curriculum courses required by the Illinois State Board of Education. Specific courses are listed for each major in the Undergraduate Catalog.
- 4. Psychology 102 as a prerequisite for Education 314 in the professional education sequence.
- 5. English 101 and 102, and one additional English Literature course with a grade of C or better. The two composition courses are a prerequisite to admission to the Teacher Education Program.
- 6. Speech Communication 101 is required for state certification.
- 7. The professional education sequence listed below. Each of the courses which are part of the program prior to the professional semester must be completed with a grade of C or better as a prerequisite to admission to the professional semester. Students must receive a grade of C or better in Education 401 to receive the institutional recommendation for certification.

<i>Professional Education Sequence</i>	28
Decision Component	
Education 308	3
Education 310	2
Basic Professional Block ¹	
Education 311	2
Education 314	2
Education 315	3
Education 316	2
Education 317	2
Professional Semester	
Education 401	12

- 8. Illinois State Teacher Certification Board general education course distributions in: science, mathematics, social science, humanities, health, and physical education. At least one three semester hour course must be taken in non-western or third world cultures in either the humanities or social sciences. Students having questions concerning whether their program meets certification board requirements should discuss their concerns with their academic advisers.

¹Includes Education 312 and 400 for Special Education majors.

Certification

A student who is nearing completion of the teacher education program (usually during the last semester) can obtain the forms to make application for entitlement to certification for the State of Illinois from the College of Education Student Services, Wham Education Building, Room 135. Upon completion of the application forms by

the student, the certification staff will process the forms. When the student's program, including graduation clearance, is completed, the office will mail the completed forms to the student's permanent address for use in applying for certification through the student's future educational service region superintendent.

Applicants for certification must register and pass the Illinois Certification Test for Basic Skills and Illinois Certification Area prior to being granted a certificate. Students are advised to take the Basic Skills Test in their junior year. The Illinois Certification Area Test should be taken prior to graduation.

The State of Illinois issues through the entitlement process the Standard Elementary Certificate, Standard High School Certificate, Standard Special Certificate, or Early Childhood-Preschool Certificate to students who graduate from an approved teacher education program at the University.

Early Childhood Certificate. Students planning to teach at the preschool-primary level in public schools or other settings in Illinois register in the College of Education. The early childhood preschool primary program is specifically designed to prepare future teachers of pre-kindergarten, kindergarten, and primary age children. For further information concerning the program, see the section of the catalog titled curriculum and instruction.

Standard Elementary Certificate. Students planning to teach on the elementary level in the public schools of Illinois register in the College of Education. Requirements for entitlement to the State of Illinois standard elementary certificate may be met through the completion of the elementary education program. For further information concerning these programs, see the sections of this catalog titled curriculum and instruction and professional education experiences.

Standard High School Certificate. Requirements for entitlement to the State of Illinois standard high school certificate and for entitlement to the standard special certificate may be met as explained in the section of this catalog titled curriculum and instruction. A listing of majors, minors, and other programs approved for certification entitlement purposes at Southern Illinois University at Carbondale is presented there. It is possible for a student to be registered in one of the colleges or schools other than the College of Education and to meet the state requirements for the standard high school certificate or the standard special certificate by using as electives certain prescribed professional education requirements in the College of Education.

Standard Special Certificate. Teaching all grades, kindergarten through grade 12, requires the standard special certificate. As noted above, requirements for entitlement to the standard special certificate may be met in the manner outlined in the section of this catalog titled curriculum and instruction in Chapter 4. Teaching fields for which the standard special certificate is issued include physical education, special education, music, art, and communication disorders and sciences.

Art Education

(SEE ART AND DESIGN IN COLLEGE OF LIBERAL ARTS)

Aquatics (Minor)

(SEE PHYSICAL EDUCATION)

Athletic Training (Minor)

(SEE PHYSICAL EDUCATION)

Biological Sciences

(SEE BIOLOGICAL SCIENCES IN THE COLLEGE OF SCIENCE)

Clothing and Textiles

(SEE WORKFORCE EDUCATION AND DEVELOPMENT)

Coaching (Minor)

(SEE PHYSICAL EDUCATION)

Communication Disorders and Sciences (Major, Courses)

The major in Communication Disorders and Sciences is part of the Rehabilitation Institute.

The program in Communication Disorders and Sciences has as its objective the training of qualified personnel to aid people who are speech, language, or hearing impaired. The undergraduate curriculum is broad in scope and gives the student the necessary preprofessional background for the clinical-research program offered at the master's level. Both state and national certification require the master's degree. Students who complete the graduate program at the master's level and have certification are qualified for positions in public or private clinics, schools, hospitals, or rehabilitation agencies. In addition, the broad scope of the program provides a solid foundation for many graduate professional programs in rehabilitation, such as rehabilitation counseling, behavioral analysis and therapy, and rehabilitation administration.

Communication Disorders and Sciences is dedicated to preparing students for leadership roles in the profession. Students are expected to develop programs that will enhance their individual strengths in light of their professional goals. The undergraduate program permits students to develop significant concentration areas outside of the department while laying the foundation for graduate education.

Proficiency in communication skills must be demonstrated prior to enrollment in clinical coursework. The undergraduate program is designed to provide the student with sufficient information and experience to determine the advisability of pursuing a graduate degree in Communication Disorders and Sciences. Those students choosing not to continue in the profession will find themselves well prepared to enter the job market with a broadly based education or to pursue graduate work in allied rehabilitation professions.

All students are encouraged to plan programs of study to meet the academic and practicum requirements for the Certificate of Clinical Competence of the American Speech-Language-Hearing Association, the Standard Special Certificate in Speech and Language Impaired of the State of Illinois or both. Programmatic planning at the bachelor's level will facilitate completion of certification requirements of American Speech-Language-Hearing Association and State of Illinois in conjunction with the master's degree program.

Bachelor of Science Degree, College of Education

COMMUNICATION DISORDERS AND SCIENCES – PREPROFESSIONAL PROGRAM

University Core Curriculum Requirements 41

To include: ENGL 101, 102; SPCM 101; MATH 110 or 113; PHYS 101, GEOL 110 or CHEM 106; PLB 115, 117, or ZOOL 115; AD 310i, ENGL 308i¹, FL 310i, 313i¹ HIST 304i¹, or PHIL 308i¹; HIST 110; AD 101, HIST 201, MUS 103

or THEA 101; FL 101, HIST 101a,¹ b, PHIL 103a,b; ENGL 121 or 204; POLS 114; PSYC 102; ANTH 202, HIST 202, 210 or SOC 215; HED 101 or PE 101.

<i>Major Requirements</i>	43
Psychology 102, 211, 301	10
Sociology 108	3
Communication Disorders and Sciences 300, 301, 302, 303, 314, 410, 419, 420, 492, 493	30
<i>Electives by Advisement</i>	36
<i>Total</i>	120

¹One course required to meet non-western civilization/third world culture requirement.

Students pursuing an Illinois Type-10 Teaching Certificate must include the following:

Mathematics and Science coursework to total 12 semester hours (including one laboratory course).

Humanities and Fine Arts coursework to total 15 semester hours.

A minimum of 3 semester hours in English literature.

And the following courses: Education 308, 310, 311, 314a, 315, History 110 and Political Science 114

A student in the College of Education who plans to be a public school speech and language clinician in Illinois, thereby needing to meet the requirements for the Standard Special Certificate - Certificate in Speech and Language Impaired, should follow the program of course requirements listed above. To meet the University Core Curriculum Requirements for certification, the following UCC courses listed above must be taken. In addition, the requirements for the Teacher Education Program must be completed as part of the electives by advisement. Recommendation for admission to the Teacher Education Program for the speech-language impaired requires a minimum grade point average of 2.75 on a 4.0 scale. The student teaching requirement may not be undertaken at the undergraduate level. Students interested in the Teacher Education Program should contact the academic adviser for Communication Disorders and Sciences in the College of Education for appropriate University Core Curriculum and Teacher Education coursework. See also Teacher Education Program above.

Rehabilitation Institute Faculty

Allen, Harry A., Professor, Ed.D., University of Arkansas, 1971.

Anderson, John O., Professor, *Emeritus*, Ph.D., Ohio State University, 1950.

Austin, Gary, Professor, *Director*, Ph.D., Northwestern University, 1973.

Beck, Richard, Associate Professor, Ph.D., University of Wisconsin-Madison, 1987.

Bender, Eleanor, Assistant Professor, *Emerita*, M.S., Southern Illinois University, 1962.

Benshoff, John J., Associate Professor, Ph.D., University of Northern Colorado, 1988.

Blache, Stephen E., Professor, Ph.D., The Ohio University, 1970.

Bordieri, James E., Professor, Ph.D., Illinois Institute of Technology, 1980.

Brackett, I. P., Professor, *Emeritus*, Ph.D., Northwestern University, 1947.

Brutten, Gene J., Professor, *Emeritus*, Ph.D., University of Illinois, 1957.

Bryson, Seymour L., Professor, Ph.D., Southern Illinois University, 1972.

Crimando, William, Professor, Ph.D., Michigan State University, 1980.

Cuvo, Anthony J., Professor, Ph.D., University of Connecticut, 1973.

Davis, Paula K., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1989.

Dickey, Thomas W., Assistant Professor, *Emeritus*, M.A., Southern Illinois University, 1964.

Falvo, Donna R., Professor, Ph.D., Southern Illinois University, 1978.

Gardner, Margaret S., Associate Professor, *Emerita*, Ph.D., Northwestern University, 1960.

Greene, Brandon F., Professor, Ph.D., Florida State University, 1979.

Grenfell, John E., Professor, *Emeritus*, Ed.D., Oregon State University, 1966.

Hafer, Marilyn, Associate Professor, *Emerita*, Ph.D., Texas Tech University, 1971.

Hoshiko, Michael S., Professor, *Emeritus*, Ph.D., Purdue University, 1957.

Janikowski, Timothy, Associate Professor, Ph.D., University of Wisconsin-Madison, 1988.

Lee, Robert E., Associate Professor *Emeritus*, Ph.D., University of Minnesota, 1964.

Lehr, Robert, Professor, *Emeritus*, Ph.D., Baylor University, 1971.

Poppen, Roger L., Professor, Ph.D., Stanford University, 1968.

Renzaglia, Guy A., Professor, *Emeritus*, Ph.D., University of Minnesota, 1952.

Riggat, Theodore F., Professor, Ed.D., University of Northern Colorado, 1977.

Rubin, Harris B., Professor, Ph.D., University of Chicago, 1965.

Rubin, Stanford E., Professor, Ed.D., University of Illinois, 1968.

Ruder, Kenneth F., Professor, Ph.D., University of Florida, 1969.

Schultz, Martin C., Professor, *Emeritus*, Ph.D., University of Iowa, 1955.

Schumacher, Brockman, Professor, *Emeritus*, Ph.D., Washington University, 1969.

Simpson, Kenneth O., Assistant Professor, Ph.D., University of Nebraska-Lincoln, 1995.

Smith, Linda McCabe, Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1994.

Taylor, Darrell, Assistant Professor, Ph.D., University of South Florida, 1992.

Vieceli, Louis, Associate Professor, *Emeritus*, M.S.Ed., Southern Illinois University, 1959.

Wright, W. Russell, Associate Professor, Ph.D., Southern Illinois University, 1974.

Curriculum and Instruction (Department, Majors, Minor [Child and Family Services], Courses)

The Department of Curriculum and Instruction offers three majors in its undergraduate program: early childhood with specializations in preschool/primary and child and family services; elementary education; and social studies. A minor in child and family services is also available, as well as courses for those students pursuing the standard high school certification program. The department offers programs to prepare students to qualify for the following Illinois teaching certificates: Early Childhood Certificate (for teaching ages 0-8); standard Elementary Certificate (for teaching in grades K-9); or Standard High School Certificate (for teaching in grades 6-12). Students may enter the department (1) directly from within the College of Education, (2) from the Pre-major program, (3) from other academic units, or (4) from other institutions of higher education.

Early Childhood Major

This program encompasses the professional training needed to assume a variety of roles such as infant development specialists; early childhood teachers and administrators; teacher and parent educators; family service workers; and teachers of young children in elementary schools.

EARLY CHILDHOOD MAJOR – PRESCHOOL/PRIMARY SPECIALIZATION

Students interested in teaching children 0-8 years of age in private or state-approved settings may elect to participate in the early childhood major leading to early childhood certification. Specifically designed to prepare future teachers of children up to the age of 8, this program will lead to the State of Illinois Early Childhood Certificate.

There are sequential steps for advancement in the early childhood major with the preschool/primary specialization program. Such advancement is based not only on continued satisfactory academic performance, but also on acceptable professional behaviors which the faculty deem essential for competent and effective educators of young children and families.

1. Completion of Curriculum and Instruction 245 and two other courses in the major with a grade of C or better, an overall grade point average of 2.25, and a favorable vote of the early childhood faculty.

- 2. Complete requirements for admission to the Teacher Education Program.
- 3. To be eligible for student teaching, a student must have attained a minimum grade point average of 2.50 in the major, successfully completed Curriculum and Instruction 227, 237, 245, 313, 317, 318, 319, 325, 327, 337, 404, 405, 413, 419, Education 312, Special Education 400; have made preliminary application for student teaching; and be approved by the coordinator of the early childhood major based on performance in the above courses. Applications for student teaching must be submitted within the first two weeks of the semester during which the student is enrolled in Curriculum and Instruction 318.

<i>University Core Curriculum Requirements</i>	41
To include ENGL 101, 102; SPCM 101; MATH 314; AD 101; HED 101; ENGL 121 or 204; HIST 110; CHEM 106, GEOL 110, or PHYS 101; PLB 117, ZOOL 115 or BIOL 115; PLB 301i, PLB 303i, or ZOOL 312i; POLS 114; PSYC 102; ANTH 202; HIST 202, 210 or SOC 215.	
<i>Preschool/Primary Specialization Requirements</i>	58
Curriculum and Instruction 237, 245, 313, 317, 318, 319, 325, 405, 413, 418, 419, 427	40
Concentration Requirements: Curriculum and Instruction 227, 337, 404, 327, Psychology 301 and choice of Anthropology 300d, Psychology 303 or Sociology 321	18
<i>Additional Requirements</i>	35
Education 312, 401	14
Special Education 400, 412	3
Additional hours for state teacher certification	12
Mathematics 114; Humanities elective; Foreign Languages and Literatures 313i, History 304i or History 101a ¹	
<i>Total</i>	134

¹Required to meet non-western civilization/third world culture requirement.

Further enrichment in special education, infant development, administration of programs and family studies can be selected by contacting the adviser for a list of recommended courses.

EARLY CHILDHOOD MAJOR – CHILD AND FAMILY SERVICES SPECIALIZATION

This program in child and family services offers preparation leading to positions as administrators and/or teachers in non-public school child care programs, including day care centers, nursery schools, family day care homes, and college child care facilities; administrators or workers in residential living facilities for exceptional children; child care and family life specialists with social and public health agencies; home economics extension specialists in child care; specialists in family life and parenting education; and infant care specialists.

To be eligible for field experience, a student must have successfully completed Curriculum and Instruction 227, 237, 245, 317, 318, 327, 404, 419 and have consent of the field experience instructor. Likewise, a minimum of nine semester hour of course work must be taken from one of the recommended elective areas prior to enrollment in the field experience.

<i>University Core Curriculum Requirements</i>	41
Foundations: English 101, 102; Speech Communication 101; Mathematics 110 and 113 or Mathematics 114 and 314	
Disciplinary Studies: Choice of Art and Design 101, Music 103 or Theater 101; Physical Education 101 or Health Education 101; humanities; Chemistry	

106, Geology 110 or Physics 101; Plant Biology 117, Zoology 115 or Plant Biology 115; Sociology 108; Psychology 102	
Integrative Studies: choice of Plant Biology 301i, Plant Biology 303i or Zoology 312i; choice of multicultural course	
<i>Child and Family Specialization Requirements</i>	48
Curriculum and Instruction 227, 237, 245, 317, 318, 327, 395, 402, 404, 405, 417, 419, 495	42
Psychology 303	3
Special Education 400	3
<i>Electives</i>	31
<i>Recommended for Preschool Directors and Teachers:</i> Curriculum and Instruction 325, 390h, 453, 498h; Accounting 210; Art 348; Health Education 402; Management 350; Physical Education 202, 309; Social Work 375, 383, 391.	
<i>Recommended for Child/Family Care Specialists in Social Services:</i> Curriculum and Instruction 390h, 498h; Health Education 440, 444; Psychology 305; Rehabilitation 405; Sociology 426; Social Work 375, 383, 391.	
<i>Recommended for Residential Life Directors and Supervisors:</i> Plant Biology 115; Finance 490; Health Education 334, 402; Management 350; Marketing 350; Psychology 451; Recreation 300; Special Education 401, 402, 403; Social Work 375, 383.	
<i>Recommended for Infant Care Specialists:</i> Plant Biology 115; Finance 490; Health Education 334, 402; Physical Education 309; Psychology 305; Social Work 375, 383, 391.	
<i>Total</i>	120

Elementary Education Major

A Bachelor of Science degree with a major in elementary education entitles the student to apply for the State of Illinois Standard Elementary Certificate, which will allow the holder to teach in kindergarten through grade nine.

Admission. All students who plan to major in Elementary Education will first be admitted as Pre-Elementary Education students provided they meet the University's admission policy and have potential to meet Teacher Education Program requirements as stated in the College of Education section, above. Beginning freshmen will be granted pre-elementary education major status. Freshmen are advised by a College of Education academic adviser for the purpose of completing the courses required to become elementary education majors.

Transfer students must meet University admission requirements to be granted pre-elementary education major status for the purpose of advisement toward the elementary education major.

Students who are currently enrolled or previously attended SIUC in a major other than elementary education may request admission to the elementary education program as pre-elementary education majors for the purpose of advisement.

Transfer and reentering students who have earned more than 45 hours of transfer credit and have a grade point average of 2.2 to 2.5 will have their applications reviewed by the department to determine if they are admissible to the pre-elementary education major classification.

To be considered an elementary education major, students must have completed 45 semester hours with an overall grade point average of 2.5 (4.0 scale) and have obtained a satisfactory score on a pre-professional test of basic skills. In addition, students must have successfully completed the following University Core Curriculum

Requirement courses: (a) Two of the following: Political Science 114, Psychology 102, History 110 and (b) English 101, 102 and Speech Communication 101 or equivalent.

Retention. There are sequential steps for advancement in the elementary education major. Such advancement is based not only on continued satisfactory academic performance, but also on acceptable professional behaviors which the faculty deem essential for competent and effective educators.

1. Initial retention in the elementary education major requires completion of two Curriculum and Instruction courses with a grade of C or better, attainment of an overall grade point average (gpa) of 2.5, and the favorable vote of the elementary education faculty. (Note: An overall minimum gpa of 2.5 is required to register for the following major courses: Curriculum and Instruction 312, 315, 423, 424, 426, and 435.)

2. Completion of the requirements for admission to the Teacher Education Program.

3. To be eligible for the professional semester the student must have attained a minimum 2.5 gpa in the major; completed Curriculum and Instruction 312, 315, and at least two of the following with a grade of C or better: Curriculum and Instruction 423, 424, 426, 427 or 435; have made preliminary application for the professional semester; and be approved by the department based on performance in all major courses.

Completion of the major requires: completion of Curriculum and Instruction 312, 315, 423, 424, 426, 427, and 435 with a grade of C or better, a minimum gpa of 2.5 in the major, and an overall gpa of 2.5. Eighteen hours of electives to be selected from one of the disciplines in the following areas: mathematics and science, humanities, or social studies. Nine of the eighteen hours must be at the 300/400 level.

ELEMENTARY EDUCATION MAJOR

<i>University Core Curriculum Requirements</i>	41
To include ENGL 101, 102; SPCM 101; MATH 314; AD 101; HED 101; ENGL 121 or 204; HIST 110; CHEM 106, GEOL 110 or PHYS 101; PLB 117, ZOOL 115, or PLB 115; PLB 301i, PLB 303i or ZOOL 312i; POLS 114; PSYC 102; ANTH 202, HIST 202, 210 or SOC 215.	
<i>Elementary Education Major Requirements</i>	40
Curriculum and Instruction 312, 315, 423, 424, 426, 427, 435	22
Concentration	18
To be selected from one of the following areas: Mathematics and Science, Humanities or Social Studies.	
<i>Professional Education Requirements</i>	28
See Teacher Education Program, above.	
<i>Additional State Certification Requirements</i>	12
To include Mathematics 114; Music 101 or 103; Physical Education 101; Foreign Languages and Literatures 313i, History 304i or History 101a ¹	
<i>Electives</i>	7
<i>Total</i>	128

¹Required to meet non-western civilization/third world culture requirements.

Majors To Prepare For Secondary School Teaching

Students who elect to pursue a Bachelor of Science degree in the College of Education, for purposes of preparing to teach in junior or senior high schools, should select academic majors and minors from the areas included in the listing below. Included in the column headed Major are those areas for which Southern Illinois Uni-

versity at Carbondale has approval from the State of Illinois Office of Education and from the State Teacher Certification Board.

TEACHING AREA	MAJOR	MINOR ¹
Agriculture, General ²	X	
Art	X	
Biological Sciences	X	X
Black American Studies		X
Economics		X
English	X	X
Foreign Languages ⁴	X	X
Health Education	X	
History	X	X
Mathematics	X	X
Microbiology		X
Music	X	X
Philosophy		X
Physical Education	X	X
Physiology		X
Political Science	X	X
Psychology		X
Social Studies	X	
Sociology		X
Theater		X
Workforce Education and Development	X	X
Business Education Specialization		
Home Economics Education Specialization		
Zoology ³	X	X

¹All minors used for certification purposes must meet the minimum number of hours specified in State Board Document I.

²Requirements for the major in general agriculture may be found in the catalog section titled Agricultural Education and Mechanization.

³A student with a major in zoology should have a minor in plant biology in order to meet certification standards for teaching biology at the high school level.

⁴Majors and minors are offered in the specific languages. The student should consult the academic adviser for information concerning the majors and minors available.

Each student who wishes to apply for the Standard High School Certificate through the certification entitlement process at Southern Illinois University at Carbondale must fulfill the following requirements of the University's Teacher Education Program:

1. The individual must have completed a baccalaureate program at Southern Illinois University at Carbondale.
2. The individual must have completed one of the approved majors above.
3. The individual must have fulfilled requirements for certification related to the state and federal constitutions and an American government or American history course by either (a) taking Political Science 114 and History 110; (b) taking a course in American history and political science other than those listed in (a) above, and passing the constitution test administered by Southern Illinois University at Carbondale; (c) presenting written notification from another institution that a course in American history and political science has been passed and that the Illinois and United States Constitutions tests have been passed.
4. The individual must have fulfilled certification requirements in health which can be satisfied by taking Health Education 101.
5. The individual must have completed the sequence of professional education courses with a grade of C or better. See Teacher Education Program.

- 6. The individual must have completed a special methods course in the major.
- 7. The individual must have fulfilled State Teacher Certification Board University Core Curriculum requirement distributions in the required areas: communication skills, science and mathematics, social sciences, humanities, health and physical development.

Students who wish to prepare to teach in middle school or junior high schools should inform their advisers of this interest early so they can include in their programs those courses which will prepare them for teaching in that area and meet Illinois State Board of Education Document 1 requirements. The student's electives should be planned to include course work in a subject matter area of major interest.

Social Studies Major

This program is designed to meet the needs of students who wish to teach social studies in the middle/junior high school or the senior high school. The graduate of this program will be qualified to teach social studies, history, political science, geography, sociology, and economics, based on requirements of the Illinois State Teacher Certification Board.

The complex nature of our competitive, pluralistic society mandates social studies curricula which prepare future citizens to comprehend and adjust to a changing social environment. The goal of the social studies program is to prepare prospective social studies teachers for the role of leadership in guiding middle school, junior, and senior high school students to live as effective citizens in a democratic society.

Content and professional course work provide the foundation used in the social studies methods course, where teaching methods and strategies are explored and experienced. A series of clinical experiences provide the social studies major an opportunity to use the knowledge and skills acquired in the program. A cooperative teaching and university supervisor will assist the student to blend knowledge and skills with adolescent behavior and curriculum needs.

University Core Curriculum Requirements	41
To include ENGL 101, 102; SPCM 101; MATH 110, 113 or approved substitute; AD 101, ENGL 203; MUS 103, HIST 201 or THEA 101; HED 101; ENGL 121 or 204; CHEM 106, GEOL 110 or PHYS 101; PLB 115, 117 or ZOOL 115; PLB 301i, 303i or ZOOL 312i; POLS 114; PSYC 102; ANTH 202, HIST 202, 210 or SOC 215.	
Requirements for Major in Social Studies	(9) + 49 ¹
History 300 and 301; US History elective	(3) + 6
History 205a, 205b, world history, plus 3 hours at the 300-400 level	9
Economics 240, 241, economics elective	9
Political Science 114, 213, political science elective	(3) + 6
Geography 300, and two geography electives	9
Anthropology 104, Psychology 102, and Sociology 301	(3) + 7
Curriculum and Instruction 469	3
Professional Education Requirements (See Teacher Education)	28
Electives	<u>2</u>
Total	120

¹Although the hours shown in parenthesis are required for the major, they will also count toward the 41 hours required in University Core Curriculum.

Child and Family Services (Minor)

The minor in child and family services is designed to provide students with basic knowledge in early childhood or family studies. The selection of coursework is flexible so that courses can be adapted to the special interests of students with diverse backgrounds and goals. Students are expected to honor all prerequisites in their selection of courses. A minimum of 16 hours of coursework is required as follows:

Curriculum and Instruction 227, 237	6
Electives to be chosen from the following:	10
Early Childhood Emphasis: Curriculum and Instruction 245, 337, 390h, 404, 498h	
Family Studies Emphasis: Curriculum and Instruction 327, 390q, 414, 498q	

Curriculum and Instruction Faculty

Aikman, Arthur L., Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1965.

Alston, Melvin O., Professor, *Emeritus*, Ed.D., Columbia University, 1945.

Appleby, Bruce C., Professor, *Emeritus*, Ph.D., University of Iowa, 1967.

Barrette, Pierre, Associate Professor, Ed.D., University of Massachusetts, 1971.

Bauner, Ruth E., Associate Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1978.

Becker, Jerry P., Professor, Ph.D., Stanford University, 1967.

Bedient, Douglas, Professor, Ph.D., Southern Illinois University at Carbondale, 1971.

Boykin, Arsene O., Associate Professor, *Emeritus*, Ed.D., University of Illinois, 1964.

Bradfield, Joyce M., Instructor, *Emerita*, M.A., George Peabody College for Teachers, 1946.

Bradfield, Luther E., Professor, *Emeritus*, Ed.D., Indiana University, 1953.

Brown, Bill, Instructor, *Emeritus*, M.Ed., University of Missouri, 1946.

Buser, Margaret, Assistant Professor, *Emerita*, M.S.Ed., Indiana University, 1966.

Butts, Gordon K., Professor, *Emeritus*, Ed.D., Indiana University, 1956.

Campbell, James A., Associate Professor, Ph.D., Ohio State University, 1978.

Casey, John P., Professor, *Emeritus*, Ed.D., Indiana University, 1963.

Copenhaver, Ron W., Associate Professor, Ed.D., Indiana University, 1978.

Coscarelli, William, Professor, Ph.D., Indiana University, 1977.

Cox, Dorothy, Assistant Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1976.

Dale, Doris C., Professor, *Emerita*, D.L.S., Columbia University, 1968.

DeWeese, Jewel V., Instructor, *Emerita*, M.S.Ed., Southern Illinois University at Carbondale, 1971.

DeWerff, Marla, Lecturer, M.S., Southern Illinois University at Carbondale, 1993.

Dixon, Billy G., Associate Professor and *Chair*, Ph.D., Southern Illinois University at Carbondale, 1967.

Eddleman, E. Jacqueline, Associate Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1970.

Edwards, Troy W., Professor, *Emeritus*, Ed.D., Indiana University, 1954.

Eichholz, Barbara, Lecturer, Ph.D., Southern Illinois University at Carbondale, 1986.

Erickson, Lawrence, Professor, Ph.D., University of Wisconsin, 1972.

Gilbert, Sharon, Associate Professor, Ph.D., Ohio State University, 1988.

Gordon, Kimberly, Assistant Professor, Ph.D., Stanford University, 1993.

Grace, Barbara E., Lecturer, M.S., Southern Illinois University at Carbondale, 1985.

Gulley, S. Beverly, Professor, Ph.D., Southern Illinois University at Carbondale, 1974.

Harrington, Mary-Margaret, Assistant Professor, Ed.D., George Peabody College of Vanderbilt University, 1995.

Hill, Margaret K., Professor, *Emerita*, Ed.D., Boston University, 1948.

Hungerford, Harold R., Professor, *Emeritus*, Ph.D., Southern Illinois University at Carbondale, 1970.

Jackson, James, Associate Professor, Ph.D., University of Wisconsin, 1976.

Jackson, Michael, Associate Professor, Ed.D., University of Florida, 1971.

Jones, Dan R., Associate Professor, Ed.D., Indiana University, 1978.

Jones, Jennie Y., Assistant Professor, *Emerita*, A.M., University of Illinois, 1949.

Karmos, Ann, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1975.

Killian, Joyce E., Professor, Ph.D., Pennsylvania State University, 1980.

Lamb, Morris L., Associate Professor, *Emeritus*, Ed.D., University of Oklahoma, 1970.

Leming, James, Professor, Ph.D., University of Wisconsin, 1973.

Lindberg, Dormalee H., Professor, Ed.D., University of Missouri, 1969.

Lumpe, Andrew, Assistant Professor, Ph.D., Kansas State University, 1992.

Malone, Willis E., Professor, *Emeritus*, Ph.D., Ohio State University, 1950.

Matthias, Margaret, Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1972.

McIntyre, D. John, Professor, Ed.D., Syracuse University, 1977.

Meyer, Edra T., Instructor, *Emerita*, M.S., Southern Illinois University at Carbondale, 1956.

Moberly, Deborah, Lecturer, M.S., Southern Illinois University at Carbondale, 1984.

Moore, Eryn E., Assistant Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1976.

Nelson, JoAnn, Assistant Professor, *Emerita*, Ph.D., University of Illinois, 1980.

Norris, William, Associate Professor, *Emeritus*, Ed.D., Indiana University, 1973.

Pearlman, Susan F., Associate Professor, Ph.D., University of Missouri, 1987.

Post, Donna M., Associate Professor, Ph.D., Pennsylvania State University, 1990.

Pultorak, Edward, Jr., Associate Professor, Ph.D., Indiana State University, 1988.

Quisenberry, James D., Associate Professor, *Emeritus*, Ph.D., Indiana University, 1972.

Quisenberry, Nancy L., Professor, Ed.D., Indiana University, 1971.

Randolph, Victor, Professor, *Emeritus*, Ph.D., George Peabody College for Teachers, 1942.

Seiferth, Berniece B., Professor, *Emerita*, Ed.D., University of Missouri, 1955.

Shelton, Vivian H., Assistant Professor, *Emerita*, M.S.Ed., Southern Illinois University at Carbondale, 1965.

Shepherd, Terry R., Associate Professor, Ph.D., University of Illinois, 1971.

Shrock, Sharon A., Associate Professor, Ph.D., Indiana University, 1979.

Sloan, Fred A., Professor, *Emeritus*, Ed.D., George Peabody College of Vanderbilt University, 1959.

Smith, Lynn C., Associate Professor, Ph.D., University of Georgia, 1984.

Solliday, Michael, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1975.

Spigle, Irving S., Associate Professor, *Emeritus*, Ed.D., Indiana University, 1955.

Starbuck, Sara, Lecturer, M.S., Southern Illinois University at Carbondale, 1985.

Volk, Gertrude L., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1983.

Waggoner, Jan, Associate Professor, Ed.D., Memphis State University, 1990.

Wendt, Paul R., Professor, *Emeritus*, Ph.D., University of Minnesota, 1948.

Wise, Kevin C., Associate Professor, Ed.D., University of Georgia, 1983.

Wood, Ruth B., Instructor, *Emerita*, M.S., University of Illinois, 1948.

Elementary Education

(SEE CURRICULUM AND INSTRUCTION)

English

(SEE ENGLISH IN THE COLLEGE OF LIBERAL ARTS)

Foreign Languages

(SEE FRENCH, GERMAN AND SPANISH LANGUAGES IN THE COLLEGE OF LIBERAL ARTS)

Health Education (Major, Courses)

Health Education offers two specializations within the health education major and two programs of minimal professional preparation. The two specializations are:

1. Community Health Education. For those planning to conduct health education and health promotion activities in non-classroom settings.

2. School Health Education. For those planning to teach health education in the secondary schools.

The two minimal professional preparations are:

1. School Health Education. For those planning to teach or supervise health education in the secondary schools.

2. Driver Education. For those planning to teach driver education in Illinois secondary schools.

These specializations, in general, constitute minimal preparation for the positions listed. Consequently, all candidates are strongly urged to complete additional work in the field.

A 2.25 grade point average is required for admission into the undergraduate health education program.

Psychomotor and verbal skills are required for students enrolled in Health Education 334 and 434. If questions arise concerning a student's ability in these areas, an assessment will be made prior to the end of the first week of the semester to determine whether the student possesses the necessary skills to remain in the course. The final decision will be made by the first aid coordinator in the Department of Health Education and Recreation.

A student in the community health education specialization must have a 2.5 grade point average in the major before clearance to do an internship. A student in the school health education specialization must have a 2.5 grade point average in the major before clearance to do student teaching.

Health Education 101, Foundations of Human Health, is required for all undergraduate health education majors. In addition, Allied Health Careers Specialties 141, or its equivalent, is a prerequisite to admission to the undergraduate program.

A C or better grade is required for all major courses in the undergraduate health education program.

Bachelor of Science Degree, College of Education

HEALTH EDUCATION MAJOR – COMMUNITY HEALTH EDUCATION SPECIALIZATION

<i>University Core Curriculum Requirements</i>	41
Health Education 101 must be included in University Core Curriculum.	
<i>Requirements for Major in Health Education</i>	39
Health Education 301, 305, 311, 312, 326, 330, 355, 401, 405, 407, 490, 491	
<i>Recommended Health Education Electives</i>	15
<i>Electives</i>	25
<i>Total</i>	120

HEALTH EDUCATION MAJOR – SCHOOL HEALTH EDUCATION SPECIALIZATION

<i>University Core Curriculum Requirements</i>	41
To include ENGL 101 and 102; SPCM 101; MATH 110 or 113; CHEM 106, GEOL 110 or PHYS 101; PLB 115 or ZOOL 115, HIST 101a ¹ ; ENGL 121 or 204; One of AD 101, ENGL 203, HIST 201, MUS 103 or THEA 101; POLS 114; PSYC 102; HED 101; One of AD 310i, ENGL 308i, FL 310i, FL 313I or HIST 304i; One of ANTH 202, SOC 215, HIST 202 or HIST 210.	
<i>Requirements for Major in Health Education</i>	39
Health Education 301, 305, 312, 326, 355, 405, 407, 491 and 9 hours of electives from: 313, 330, 334 or 401	
Additional Courses to Meet Certification Requirements: Allied	
Health Careers Specialties 141, History 110	6
<i>Professional Education Requirements</i>	28
(See Teacher Education Program.)	
<i>Electives</i>	12
<i>Total</i>	120

¹Required to meet non-western civilization/third world culture requirement.

The two minimal professional preparation requirements for Illinois teachers are:

School Health Education: Health Education 301, 305, 355, 405 or 410, 407, 491 and at least two courses from the following: 312, 313s, 330, 401, 488.

Driver Education: Health Education 302s, 313s, 442s, 443s, plus three hours of electives from the following: 334, 445, 470s, 480s.

Health Education and Recreation Faculty

Aaron, James E., Professor, *Emeritus*, Ed.D., New York University, 1960.

Abernathy, William, Assistant Professor, *Emeritus*, M.S.Ed., Southern Illinois University, 1963.

Blasini-Caceres, Lydia, Assistant Professor, Ph.D., Pennsylvania State University, 1993.
Boydston, Donald N., Professor, *Emeritus*, Ed.D., Columbia University, 1949.
Bridges, A. Frank., Professor, *Emeritus*, D.H.S., Indiana University, 1952.
Drolet, Judy C., Professor, Ph.D., University of Oregon, 1982.
Glover, James, Associate Professor, Ph.D., University of Maryland, 1980.
Glover, Regina, Associate Professor and Chair, Ph.D., University of Maryland, 1983.
Grissom, Deward K., Professor, *Emeritus*, Ed.D., Columbia University, 1952.
Hailey, Robert, Assistant Professor, M.Ed., University of Missouri, Columbia, 1959.
Kittleson, Mark J., Professor, Ph.D., University of Akron, 1986.
Lacey, Ella P., Associate Professor, *Emerita*, Ph.D., Southern Illinois University, 1979.
LeFevre, John R., Professor, *Emeritus*, Ed.D., Teachers Colleges, Columbia University, 1950.
Malkin, Marjorie J., Associate Professor, Ed.D., University of Georgia, 1986.
McEwen, Douglas, Professor, Ph.D., Michigan State University, 1973.
O'Brien, William, Professor, *Emeritus*, D.Rec., Indiana University, 1967.

O'Dell, Irma, Assistant Professor, Ph.D., University of New Mexico, 1992.
Ogletree, Roberta J., Associate Professor, H.S.D., Indiana University, 1991.
Phillips, Frances K., Associate Professor, *Emerita*, M.A., Columbia University, 1940.
Richardson, Charles E., Professor, *Emeritus*, Ed.D., University of California, Los Angeles, 1959.
Ritzel, Dale O., Professor, Ph.D., Southern Illinois University, 1970.
Russell, Robert D., Professor, Ed.D., Stanford University, 1954.
Sarvela, Paul, Professor, Ph.D., University of Michigan, 1984.
Sliepcovich, Elena M., Professor, *Emerita*, D.P.E., Springfield College, 1955.
Teaff, Joseph, Professor, Ed.D., Columbia University, 1973.
Vaughn, Andrew T., Professor, *Emeritus*, D.Ed., Columbia University, 1958.
Vitello, Elaine, Professor, Ph.D., Southern Illinois University, 1977.
Vogel, Herbert, Assistant Professor, M.S., Indiana University, 1954.
Welshimer, Kathleen J., Associate Professor, Ph.D., University of North Carolina, 1990.
Zunich, Eileen M., Assistant Professor, *Emerita*, Ph.D., Southern Illinois University, 1970.

History

(SEE HISTORY IN THE COLLEGE OF LIBERAL ARTS)

Mathematics

(SEE MATHEMATICS IN THE COLLEGE OF SCIENCE)

Music

(SEE MUSIC IN THE COLLEGE OF LIBERAL ARTS)

Physical Education (Department, Major, Courses)

The Department of Physical Education offers programs which qualify graduates for positions as teachers in elementary and secondary schools or for alternative careers in private, industrial, and public settings. Whatever the student's career aims may be, the programs provide a full range of intriguing and challenging professional opportunities in diversified curricula. The student can choose a discipline best suited to individual interests, talents, temperament, and future plans. While studying new concepts, the student will observe the work of outstanding teachers, athletic coaches, and clinicians. Whichever direction is selected, the student will study and practice in modern facilities, with the latest equipment and will learn the most recent techniques.

Teacher Education Specialization. The teacher education specialization consists of courses which are designed to meet the requirements of the Illinois State Department of Education and are, in most cases, transferable to meet requirements of other states.

The laboratory and classroom experiences consist of basic and applied sciences, methods of teaching, and acquisition of physical skills which include a variety of team and individual sports, exercise, and dance.

Students selecting the Teacher Education Specialization may also elect additional courses to become certified by the Illinois Athletic Coaching Certification Board (IACCB) or complete a minor in either aquatics or athletic training. These additions to the preparation for teaching will enhance a graduate's employment opportunities.

Athletic Training Specialization. The athletic training specialization is designed to train students to provide exemplary first-aid care for student-athletes, and administer rehabilitation, therapeutic treatment, and preventive conditioning programs under the supervision of a physician. This program prepares graduates for careers as athletic trainers in public schools, colleges, and private and industrial settings.

Exercise Science and Physical Fitness. This program is designed for students who wish to direct physical fitness programs in private, industrial and public settings. Preparation in this program enables the graduate to assess components of adult fitness, design individual exercise programs for the development and maintenance of physical fitness, and manage a physical fitness program. Graduates will have the foundation for continued study at the graduate level.

Bachelor of Science Degree, College of Education

PHYSICAL EDUCATION MAJOR – TEACHER EDUCATION SPECIALIZATION

<i>University Core Curriculum Requirements</i>	41
To include: ENGL 101, 102, and 121 or 204; SPCM 101; MATH 110 or 113; FL 101, HIST 101a ¹ , HIST 101b, PHIL 103a or PHIL 103b; HIST 110; AD 101, ENGL 203, HIST 201, MUS 103 or THEA 101; POLS 114; ZOOL 115; CHEM 106, GEOL 110 or PHYS 101; ANTH 202, HIST 202, 210 or SOC 215; AD 310i, ENGL 308i, FL 310i or FL 313i; HED 101.	
<i>Requirements for Major in Physical Education</i>	42
Physical Education 100, 113, 114, 116a,b, 117, 118a,b, 120, 121, 122, 301, 305, 314, 317, 318, 319, 321, 322, 323, 324, 345, 370, Physiology 220.	
<i>Professional Education Requirements</i>	28
See Teacher Education Program.	
<i>Additional courses required for Teacher Certification</i>	6
Psychology 102, Physiology 201	
<i>Electives</i>	7
<i>Total</i>	124

PHYSICAL EDUCATION MAJOR – ATHLETIC TRAINING SPECIALIZATION

Students majoring in physical education with a specialization in athletic training must maintain the following standards to remain in the program:

1. A minimum grade point average of 2.25 at the University.
2. A minimum grade point average of 2.5 for all required course work in the athletic training specialization;
3. Obtain a grade of B or better in Physical Education 225;
4. Obtain a grade of C or better in Physiology 301;
5. Complete 1200 hours of clinical experience;
6. Be proficient in basic skills according to class level.

The prospective student should make an early application to this program because enrollment is limited due to the size of the faculty.

<i>University Core Curriculum Requirements</i>	41
To include Physics 101; Zoology 118; Health Education 101; Psychology 102; Speech Communication 101	
<i>Requirements for Major in Physical Education</i>	81
Core Requirements	19
Physical Education 115, 303, 304, 326, 320; Physiology 201, 220	
Additional Physical Education Requirements	26
Physical Education 225, 226, 305, 317, 325, 327, 328a,b, 341, 355d, 370, 381, 382, 407 or 426.	
Additional Requirements	36
Physical Therapist Assistant 203, 208, Allied Health Careers Specialties 105; Health Education 334, 407, 434; Psychology 302, 303, 323; Physiology 208, 301; Chemistry 106; Food Nutrition 101	
<i>Electives</i>	<u>3</u>
<i>Total</i>	125

PHYSICAL EDUCATION MAJOR – EXERCISE SCIENCE AND PHYSICAL FITNESS SPECIALIZATION

<i>University Core Curriculum Requirements</i>	41
To include Psychology 102 and Zoology 118 as a substitute.	
<i>Requirements for Major in Physical Education</i>	68
Core Requirements	(2) + 16
Physical Education 115, 303, 304, 320, 324; Physiology 201, 220	
Additional Physical Education Requirements	16
Physical Education 113, 355f, 380, 381, 382, 408, 420	
Additional Requirements	(6) + 36
Accounting 210; Management 170, 202, 301 or 304, 350 or 385; Biology 306 or 308 or 309; Chemistry 140a,b; Computer Science 202 or 212 or Information Management Systems 229; Food and Nutrition 215, 320; Physiology 208; Educational Psychology 402; Zoology 118.	
<i>Electives</i>	<u>11</u>
<i>Total</i>	120

Students wishing to gain experience in physical education and areas related to physical education may pursue work in aquatics, coaching and athletic training.

Minor in Physical Education

A student with a minor in physical education in secondary education must complete the following courses:

<i>Required Activity Courses</i>	11
Physical Education 113, 114, 116a,b, 117, 118a,b, 120	10
<i>Required Methods Course</i>	1
Physical Education 322	1
<i>Required Theory Courses</i>	17
Physical Education 301, 305, 317, 319, 321, 324, 370	14
Physiology 220	<u>3</u>
<i>Total</i>	29

Minor in Aquatics

A student must have advanced swimming skill, a current American Red Cross Life-guarding certificate and a current adult CPR certification to enter the program. If not, the student must obtain them by coursework or workshops.

Required Courses:	10
Physical Education 307 or 311, 310, 312, 355a, 418	
Electives:	6
Three courses from Physical Education 307 or 311; 308a, b, c, d, or e; 330c; 494a, b (First Aid Instructor and CPR Instructor cer- tification ¹ .)	
Total	16

¹Current First Aid and CPR certification completed independent of coursework is acceptable. Certification may be satisfied through the coursework indicated.

Minor in Athletic Training

The prospective student should make an early application for admission to this program because enrollment is limited due to the size of the faculty.

Students in physical education with a minor in athletic training must complete the following requirements for retention in the minor: (1) 2.25 SIUC grade point average; (2) 2.5 grade point average in required courses; (3) *B* in Physiology 220; (4) *B* in Physical Education 225; (5) complete 800 hours of clinical experience supervised by a certified trainer at the University; and (6) must be proficient in the basic athletic training skill according to class level.

Requirements for the minor are listed below.

University Core Curriculum Requirements	10
Psychology 102; Health Education 101; Food and Nutrition 101; Speech Communication 101	
Physical Education Requirements	34
Physical Education 115, 225, 226, 303, 304, 305, 317, 320, 325, 326, 327, 328a,b, 341, 355d, 370, 407 or 426	
Other Requirements	20
Psychology 303, Health Education 334 and 434, Physical Therapist Assistant 208, Physiology 201, 208, 220	
Total	64

Minor in Coaching

Requirements for the minor are listed below:

Required courses	13-14
Physical Education 114 or 115, 317, 324, 329, 345, 355C.	
The Department of Physical Education recommends the additional courses: Physical Education 319 or 320, 303 and 304 or 321, 330 (appropriate sport).	

Physical Education Faculty

Ackerman, Kenneth, Assistant Professor, M.A., Michigan State University, 1959.
Becque, M. Daniel, Associate Professor, Ph.D., University of Michigan, 1988.
Blackman, Claudia J., Assistant Professor, M.S.Ed., Southern Illinois University, 1968.
Blinde, Elaine M., Associate Professor, Ph.D., University of Illinois, 1987.
Brechtelsbauer, Kay M., Assistant Professor, Ph.D., Southern Illinois University, 1980.

Carroll, Peter, Assistant Professor, Ph.D., Pennsylvania State University, 1970.
Dirks, W. Edward, Instructor, M.S., Southern Illinois University, 1964; Certificate, Physical Therapy, Ohio State University, 1965.
Good, Larry, Associate Professor, Ph.D., Temple University, 1968.
Hartzog, Lewis, Instructor, Emeritus, M.E., Colorado State University, 1954.

Illner, Julee Ann, Assistant Professor, M.S.Ed., Southern Illinois University, 1968.

Knowlton, Ronald, Professor and *Chair*, Ph.D., University of Illinois, 1961.

Long, Linn, Assistant Professor, M.S., University of Colorado, 1967.

McCallister, Sarah G., Assistant Professor, Ed.D., University of Arkansas, 1989.

Okita, Ted, Professor, *Emeritus*, M.A., Northwestern University, 1964.

Perkins, Sally A., Instructor, M.S., Indiana University, 1976.

Potter, Marjorie Bond, Professor, *Emerita*, Ph.D., University of Southern California, 1958.

Shea, Edward, Professor, *Emeritus*, Ph.D., New York University, 1955.

Stotlar, John, Associate Professor, *Emeritus*, D.P.Ed., Indiana University, 1954.

Thorpe, Jo Anne Lee, Professor, *Emerita*, Ph.D., Texas Woman's University, 1964.

Veltri, Frank R., Instructor, M.A., Mankato State, 1984.

West, Charlotte, Professor, Ph.D., University of Wisconsin, 1969.

Wilson, Donna, Associate Professor, M.F.A., University of Oklahoma, 1975.

Zimmerman, Helen, Professor, *Emerita*, Ph.D., University of Wisconsin, 1951.

Professional Education Experiences

Student Teaching

Student teaching constitutes a total professional commitment on the part of the student and is a full semester of experience in the field carrying 12 hours of credit. Special permission must be obtained from the director of Professional Education Experiences before any additional course work can be taken with student teaching.

The student teacher must follow the same daily schedule as the cooperating teacher with whom the student is placed. This means that the student teacher remains in the school for the entire day, as well as participating in whatever extracurricular activities might be the responsibility of the cooperating teacher.

Students majoring in elementary education will be assigned to work with a cooperating teacher in one of the elementary grades, one through six, in an affiliated school. Students majoring in early childhood will be assigned to work with a cooperating teacher in a preschool/kindergarten and/or primary grade, one through three, in an affiliated school.

The student who majors in a secondary school subject field which has an approved program in the teacher education program will be assigned to work with a cooperating teacher in a secondary school, grades seven through twelve, whose teaching assignment is consistent with the student's teaching major.

Special education majors will be assigned to work with a cooperating teacher in the appropriate special area: mental retardation, behavioral disorders, or learning disabilities. Special education majors will be assigned at both the elementary and secondary levels in order to meet certification requirements. Similar grade level assignments will be made for art, music, and physical education majors. Students majoring in communication disorders and sciences will be assigned to a cooperating teacher who is a speech clinician in an affiliated school.

Students wishing to enroll in the professional semester during the fall or spring semester of the academic year must file an application with the College of Education Student Services, Wham Building, Room 135, at least one semester in advance of the semester during which they wish an assignment. Student teaching credit during the summer session is restricted to those individuals who hold a provisional teaching certificate or who are enrolled in the Early Childhood-Preschool/Primary Specialization. Participation in this program also is dependent upon the availability of suitable placements in the summer school programs of participating public schools.

Applications for both regular academic year and special summer participation are available in the College of Education Student Services, Wham Building, room 135.

The student must register for the professional semester following normal registration procedures. Registration will include the following course: Education 401,

12 hours. Students will register for the section of this course designated for their majors. Registration during the summer session is by restricted class card for Education 402, 5-8 hours.

PLACEMENT OF STUDENT TEACHERS

Student teaching under the supervision of Southern Illinois University at Carbondale faculty is conducted in professional education centers with affiliated schools located in southern Illinois as well as specific locations in Belleville and suburban Chicago. A current listing of specific schools to which student teachers may be assigned is available in the College of Education Student Services.

In so far as numerical limits will permit, students will be assigned to the location of their choice. However, if the limits have been met, students are advised that they may be assigned to any of the centers which can suitably accommodate them.

Students are advised to make no binding housing commitments during the professional semester until they have received verification of their student teaching assignments. Such housing commitments will not be considered when students are assigned.

PROFESSIONAL SEMESTER (STUDENT TEACHING) PREREQUISITES

1. Students must have achieved formal acceptance into the teacher education program and must present their records of acceptance when applying for the professional semester.

2. The student is responsible for having all transcripts of credit earned at colleges or universities other than Southern Illinois University at Carbondale on file with the coordinator in the College of Education Student Services. These must be on file by the tenth day of the semester for which the student is applying.

3. Prior to the professional semester, the student must have completed a minimum of 20 semester hours in the subject area to be taught. The course work involved must meet the approval of the department chair of that major department. (Course work and performance required may be obtained from the department concerned.) An up-to-date list of approved majors in the teacher education program may be found in the booklet, *The Teacher Education Program*, or requested from the College of Education Student Services.

4. The student must have completed a minimum of 100 clock hours of pre-student teaching field experiences.

5. The student must have completed 75 semester hours of credit with a minimum cumulative average of 2.5 in the major before beginning work in student teaching.

6. Each of those courses which are a part of the professional education sequence prior to the professional semester must have been completed with a grade of C or better. (See Teacher Education Program.)

7. The student must have completed the special methods class required for the major prior to the professional semester.

8. Every student teacher must have a health clearance from the University Student Health Program. The health clearance consists of a tuberculin test. If it is not convenient to come to the health service in Carbondale, students may have a tuberculin test by their own medical doctors. A record of the health clearance must be on file in the College of Education Student Services by the tenth day of the semester immediately preceding the student's professional semester.

9. The student must have established at least one semester of residence at Southern Illinois University at Carbondale earning a minimum of 12 semester hours of credit, prior to any professional semester assignment.

Field Experiences Other Than the Professional Semester

Other field experiences for students in the teacher education program are provided in Education 310 and Education 316. Applications for these courses are available in the College of Education Student Services.

Student Services Faculty

Aud, Susan, Lecturer, Ph.D., Southern Illinois University 1994.

Buser, Margaret, Assistant Professor, *Emerita*, M.S.Ed., Indiana University, 1966.

Cox, Jackie, Lecturer, M.S., Southern Illinois University, 1992.

Gilley, George, Lecturer, Ph.D., The Ohio State University, 1978.

Jin, Lijun, Lecturer, Ph.D., Indiana University of Pennsylvania, 1996.

Messersmith, Gary, Lecturer, M.S., Southern Illinois University, 1973.

McIntyre, D. John, Professor, *Director*, Ed.D., Syracuse University, 1977.

Moore, Eryn E., Assistant Professor, *Emerita*, Ph.D., Southern Illinois University, 1976.

Napier, Arvin, Lecturer, M.S., University of Missouri, 1967.

Norris, William R., Associate Professor, *Emeritus*, Ed.D., Indiana University, 1973.

Turner, Doris Sewell, Lecturer, *Emerita*, M.S. Ed., Southern Illinois University, 1949.

Wetzel, Ann, Lecturer, M.S., Eastern Illinois University, 1984.

Werner, Isabel, Lecturer, Ph.D., Southern Illinois University, 1993.

Williams, Sarah L., Lecturer, M.S., Southern Illinois University at Edwardsville, 1972.

Recreation (Major, Courses)

The Recreation major prepares the student for positions in the management of leisure services. The curriculum, built on a broad core, offers professional courses within the department and draws from many related majors for competencies and skills in the preparation of professionals for the recreation field. The curriculum emphasizes the practical as well as the theoretical aspects of recreation by offering supervised field experience and internships in various recreational settings throughout Illinois and the nation.

Students admitted to recreation must meet the College of Education requirements and follow their procedures for acceptance. Incoming freshmen must rank in the top one-half of their high school graduating class and have a standard composite ACT score of 19 or higher. Transfer students seeking admission from another institution or from another program at SIUC must have a 2.25 grade point average or above. Transfer students with less than 26 semester hours must have a 2.25 grade point average or above as well as the rank and test score requirements of an entering freshman. In order to be admitted to practicum courses, students must have a grade point average of 2.25 and the consent of the instructor. Students who do not meet the College of Education requirements must be screened and approved by the department undergraduate faculty.

Students majoring in recreation are required to complete 41 hours of University Core Curriculum courses, 35 hours of professional core courses and 44 hours of professional courses in at least one area of specialization. Electives for their chosen area of specialization must have adviser approval. A total of 79 hours beyond the University Core Curriculum is required. A grade of C or better is required in all Recreation prefix required courses.

Recreation offers courses leading to specializations in therapeutic recreation and program services. A careful selection of recommended electives can be used to build competencies in recreation administration, outdoor recreation and commercial recreation.

Students majoring in recreation should meet early in their college careers with a faculty member in the department to identify their area of interest and recommended electives. Within the field of recreation, certifications may be required for employment in different interest areas and the faculty member will discuss these with interested students. All students are encouraged to obtain the American Red Cross First

Aid Certificate. Students focusing on a therapeutic orientation should attempt to acquire either academic or practical experience related to physiological, psychological and sociological functioning and the concomitant effect of disability. As soon as possible, recreation majors will decide on one of the two specializations and elect courses for their area of specialization.

Bachelor of Science Degree, College of Education

University Core Curriculum Requirements	41
Requirements for Major in Recreation.....	79
English 290	3
Recreation 300, 301, 302, 303, 305, 367, 380-4, 490-12	32
One of the specializations listed below	44
Total	120

PROGRAM SERVICES SPECIALIZATION

Recreation 365, 375, 425, 445, 465	15
Accounting 210 or 220	3
Workforce Education and Development 306 or Curriculum and Instruction 483a	3
Six hours selected from Psychology 301, 303, 304, 305, 307, 320, 323, 333	6
Electives (May be subject to certification requirements.)	17
Total	44

THERAPEUTIC RECREATION SPECIALIZATION

Recreation 304, 460, 461, 462	12
Six hours selected from Recreation 440a, 440b, 440c, 440d, 440e	6
Psychology 305 and 431	6
Allied Health Careers Specialties 141	4
Health Education 311	3
Electives (in accordance with certification requirements)	13
Total	44

Health Education and Recreation Faculty

Aaron, James E., Professor, *Emeritus*, Ed.D., New York University, 1960.

Abernathy, William, Assistant Professor, *Emeritus*, M.S.Ed., Southern Illinois University, 1963.

Blasini-Caceres, Lydia, Assistant Professor, Ph.D., Pennsylvania State University, 1993.

Boydston, Donald N., Professor, *Emeritus*, Ed.D., Columbia University, 1949.

Bridges, A. Frank., Professor, *Emeritus*, D.H.S., Indiana University, 1952.

Drolet, Judy C., Professor, Ph.D., University of Oregon, 1982.

Glover, James, Associate Professor, Ph.D., University of Maryland, 1980.

Glover, Regina, Associate Professor and Chair, Ph.D., University of Maryland, 1983.

Grissom, Deward K., Professor, *Emeritus*, Ed.D., Columbia University, 1952.

Hailey, Robert, Assistant Professor, M.Ed., University of Missouri, Columbia, 1959.

Kittleson, Mark J., Professor, Ph.D., University of Akron, 1986.

Lacey, Ella P., Associate Professor, *Emerita*, Ph.D., Southern Illinois University, 1979.

LeFevre, John R., Professor, *Emeritus*, Ed.D., Teachers Colleges, Columbia University, 1950.

Malkin, Marjorie J., Associate Professor, Ed.D., University of Georgia, 1986.

McEwen, Douglas, Professor, Ph.D., Michigan State University, 1973.

O'Brien, William, Professor, *Emeritus*, D.Rec., Indiana University, 1967.

O'Dell, Irma, Assistant Professor, Ph.D., University of New Mexico, 1992.

Ogletree, Roberta J., Associate Professor, H.S.D., Indiana University, 1991.

Phillips, Frances K., Associate Professor, *Emerita*, M.A., Columbia University, 1940.

Richardson, Charles E., Professor, *Emeritus*, Ed.D., University of California, Los Angeles, 1959.

Ritzel, Dale O., Professor, Ph.D., Southern Illinois University, 1970.

Russell, Robert D., Professor, Ed.D., Stanford University, 1954.

Sarvela, Paul, Professor, Ph.D., University of Michigan, 1984.

Sliepcevich, Elena M., Professor, *Emerita*, D.P.E., Springfield College, 1955.

Teaff, Joseph, Professor, Ed.D., Columbia University, 1973.

Vaughn, Andrew T., Professor, *Emeritus*, D.Ed., Columbia University, 1958.

Vitello, Elaine, Professor, Ph.D., Southern Illinois University, 1977.

Vogel, Herbert, Assistant Professor, M.S., Indiana University, 1954.

Welshimer, Kathleen J., Associate Professor, Ph.D., University of North Carolina, 1990.

Zunich, Eileen M., Assistant Professor, *Emerita*, Ph.D., Southern Illinois University, 1970.

Social Studies

(SEE CURRICULUM AND INSTRUCTION)

Special Education (Major, Courses)

A Bachelor of Science degree with major in Special Education entitles the student to apply for the State of Illinois Standard Special Certificate. Students seeking the Standard Special Certificate complete coursework leading to approval in one or more of the three disability areas; learning disabilities, behavior disorders and mental retardation. Students who wish to obtain joint certification in Special Education and Elementary Education must complete a 149 hour program. All programs are fully approved by the Illinois State Teacher Certification Board.

Admission. All students who plan to major in Special Education will first be admitted as Pre-Special Education students provided they meet the University's admission policy and have potential to meet Teacher Education Program requirements as stated in the College of Education section. Beginning freshman will be granted Pre-Special Education status. Freshman are advised by a College of Education adviser for the purpose of completing the courses required to become Special Education majors.

Transfer students must meet University admission requirements to be granted Pre-special Education major status for the purpose of advisement toward the Special Education major.

Students who are currently enrolled or previously attended SIUC in a major other than Special Education may request admission to the Special Education program as Pre-Special Education majors for the purpose of advisement.

Transfer and reentering students who have earned more than 30 hours of transfer credit and have a grade point average of 2.2 to 2.5 will have their applications reviewed by the department to determine if they are admissible to the Pre-Special Education major classification.

To be considered a Special Education major, students must meet the following requirements:

1. Meet the criteria for admission into the College of Education Teacher Education Program.

2. Completion of a minimum of 30 semester hours in University Core Curriculum courses with an overall grade point average of 2.5 (4.0 scale). In addition, students must successfully complete the following University Core Curriculum courses: (a) Geography 103 (b) Psychology 102; (c) Political Science 114 or Economics 113; and (d) English 101 and 102, Speech Communication 101.

3. Submit documentation that the applicant has had at least 100 hours of direct contact and experience with individuals with disabilities. Satisfactory documentation of the experience will include a letter on company, agency or organization letterhead stating the number of hours of direct contact the applicant has been engaged with persons with disabilities. The letter should state the name, address and phone number of an individual who can verify the experience of the applicant.

- 4. An ACT score of 18 or above.
- 5. Three letters of recommendation from college, university faculty or other individuals familiar with their performance as a student.

Retention Criteria. There are specific and sequential criteria for a student to be retained as a special education major. Retention as a special education major is based not only on continued satisfactory academic performance, but also on acceptable professional behaviors which the faculty deem essential for competent and effective educators. The retention criteria include:

- 1. Retention in the Special Education program requires completion of the courses required of their specialization area(s) with a grade of C or better. Courses requiring a C or better include: Special Education 312, 315, 401, 402, 404, 406, 411, 417, 418, 419, 421, 423, 425, 430, 431. Other retention criteria include: (a) attainment of an overall grade point average of 2.5, and (b) a favorable endorsement of the special education faculty.
- 2. To be eligible for the professional semester the student must have attained a minimum 2.75 gpa in the major with an minimum overall gpa of 2.5.

Bachelor of Science Degree, College of Education

SPECIAL EDUCATION MAJOR – STANDARD SPECIAL CERTIFICATE WITH APPROVAL IN BEHAVIORAL DISORDERS, OR MENTAL RETARDATION, OR LEARNING DISABILITIES¹

<i>University Core Curriculum Requirements</i>	41
To include ENGL 101, 102; SPCM 101; MATH 314; CHEM 106, GEOL 110 or PHYS 101; PLB 115, 117 or ZOOL 115; One of FL 101, HIST 101a, 101b, PHIL 103a or PHIL 103b; HIST 110; MUS 103; ENGL 121 or 204; FL 313i or HIST 304i; POLS 114; ANTH 202, HIST 202, 210 or SOC 215; HED 101 or PE 101.	
<i>Additional Requirements for Certification</i>	19
To include Mathematics 114; Plant Biology 301i, 303i, Zoology 312i or one course from science courses listed above; Psychology 102; Psychology 301; Educational Psychology 412 or Psychology 431; Art and Design 348, Curriculum and Instruction 325 or Physical Education 202.	
<i>Requirements for Major in Special Education</i>	56-59
Professional Education Requirements	31
See Teacher Education Program. (Education 312-3 hours) ¹	
Special Education Requirements	25-28
Special Education 312, 315, 400, 411, 423, 425	19
Certification Area	9-12
(1) Behavioral Disorders: 401, 417, 430	
(2) Mentally Retarded:	
Educable Mentally Retarded: 402, 406, 418, 430	
Trainable-Severely/Profoundly Handicapped: 402, 406, 421, 431	
(3) Learning Disabilities: 404, 419, 430	
<i>Electives</i>	1-4
Psychology 305, 307 (both required in behavioral disorders), Curriculum and Instruction 407	
<i>Total</i>	120

¹To be certified in two areas of special education, a student must take problem and characteristics courses in both areas, methods courses in both areas and eight hours of student teaching in both areas.

SPECIAL EDUCATION MAJOR – JOINT CERTIFICATION IN SPECIAL EDUCATION AND
ELEMENTARY EDUCATION SPECIALIZATION

<i>University Core Curriculum Requirements</i>	41
To include ENGL 101, 102; SPCM 101; MATH 314; AD 101; HED 101; ENGL 121 or 204; HIST 110; CHEM 106, GEOL 110 or PHYS 101; PLB 117 or BIOL 115; PLB 301i, PLB 303i, or ZOOL 312i; POLS 114; PSYC 102; ANTH 202, HIST 202, 210 or SOC 215.	
<i>Additional Requirements for Certification</i>	33
Mathematics 114; Music 101 or 103; Physical Education 101; Foreign Languages and Literatures 313i, History 304i or History 101a	12
Art and Design 348, Curriculum and Instruction 328 or Physical Education 202	3
Concentration in Psychology to include; Psychology 301, 305, 307, 431 .	18
<i>Requirements for Major in Special Education</i>	72-75
Professional Education Requirements ¹	34
See Teacher Education Program. (Education 312/400-6 hours)	
Special Education Requirements	19-22
Special Education 312, 315, 400, 411, 423, 425	19
Certification Area	9-12
(1) Behavioral Disorders: 401, 417, 430	
(2) Mentally Retarded:	
Educable Mentally Retarded: 402, 406, 418, 430	
Trainable-Severely/Profoundly Handicapped: 402, 406, 421, 431	
(3) Learning Disabilities: 404, 419, 430	
Elementary Education Requirements	16
Curriculum and Instruction 423, 424, 426, 427, 435	
Total	146-149

¹Includes eight hours of student teaching for special education and eight hours of student teaching for elementary education.

Educational Psychology and Special Education Faculty

Baeza, Jesus, Jr., Assistant Professor, Ph.D., University of Iowa, 1989.

Bardo, Harold R., Associate Professor, Ph.D., Southern Illinois University, 1972.

Bates, Paul, Professor, Ph.D., University of Wisconsin, 1978.

Beggs, Donald L., Professor, Ph.D., University of Iowa, 1966.

Bradley, Richard W., Professor, Ph.D., University of Wisconsin, 1968.

Brown, Beverly, Associate Professor, Ph.D., University of Iowa, 1974.

Casey, John P., Professor, *Emeritus*, Ed.D., Indiana University, 1963.

Cody, John J., Professor, Ph.D., University of Wisconsin, 1961.

Cordoni, Barbara, Professor, Ed.D., Duke University, 1976.

Crowner, James, Professor, *Emeritus*, Ph.D., Michigan State University, 1960.

Daniels, M. Harry, Professor, Ph.D., University of Iowa, 1978.

Deichmann, John W., Associate Professor, Ph.D., St. Louis University, 1969.

DeWeese, Harold L., Professor, *Emeritus*, Ed.D., University of Illinois, 1959.

Dillon-Sumner, Ronna, Professor, Ph.D., University of California at Riverside, 1978.

Elmore, Patricia B., Professor, Ph.D., Southern Illinois University, 1970.

Ewing, Norma J., Associate Professor, Ph.D., Southern Illinois University, 1974.

Foley, Regina, Associate Professor, Ed.D., Northern Illinois University, 1989.

Hisama, Toshiaki, Associate Professor, *Emeritus*, Ph.D., University of Oregon, 1971.

Juul, Kristen D., Professor, *Emeritus*, Ed.D., Wayne State University, 1953.

Karmos, Joseph, Visiting Professor, Ph.D., Southern Illinois University, 1974.

Kelly, Francis J., Professor, Ph.D., University of Texas, 1963.

Leitner, Dennis, Associate Professor, Ph.D., University of Maryland, 1975.

Lewis, Ernest, Professor, Ph.D., Southern Illinois University, 1971.

Miller, Sidney R., Professor, Ph.D., Pennsylvania State University, 1974.

Morgan, Howard, Professor, *Emeritus*, Ed.D., Wayne State University, 1962.

Mouw, John T., Professor, *Emeritus*, Ed.D., University of South Dakota, 1968.

Mundschenk, Nancy, Assistant Professor, Ph.D., University of Iowa, 1992.
Pohlmann, John T., Professor and *Chair*, Ph.D., Southern Illinois University, 1972.
Prichard, Karen K., Associate Professor, Ph.D., Kent State University, 1981.
Snowman, Jack, Professor, Ph.D., Indiana University, 1975.
Teska, James, Associate Professor, Ph.D., University of Illinois, 1969.

White, Gordon, Assistant Professor, Ph.D., University of Iowa, 1969.
White, Lyle J., Associate Professor, Ph.D., University of Iowa, 1988.
Woehlke, Paula L., Professor, Ph.D., Arizona State University, 1973.
Yates, J. W., Professor, *Emeritus*, Ed.D., University of Missouri, Columbia, 1951.

Speech Pathology and Audiology

(SEE COMMUNICATION DISORDERS AND SCIENCES.)

Workforce Education and Development (Department, Majors [Workforce Education and Development, Clothing and Textiles], Minors, Courses)

The Department of Workforce Education and Development offers two majors: Workforce Education and Development and Clothing and Textiles. Graduates with a degree in Workforce Education and Development are prepared for positions in public vocational/technical education programs and private sector training and development departments. Graduates with a degree in Clothing and Textiles assume technical, supervisory and managerial roles in the fashion industry. A grade of C or better is required in all WED prefix courses. Students who qualify in either of the two majors may elect to apply for Capstone. Criteria for acceptance into the Capstone Option appear in Chapter 3.

WORKFORCE EDUCATION AND DEVELOPMENT

Students majoring in workforce education and development are prepared as instructors and instructional support personnel in education, business, industry, labor, and government training organizations. Students may develop competencies in one of five specializations: business education; home economics education; education, training and development; administrative services training; and vocational teacher development.

Bachelor of Science Degree, College of Education

<i>University Core Curriculum Requirements</i>	41
<i>Requirements for Major in Workforce Education and Development</i>	80-94
Core Requirements	9
Nine hours of upper division course work: 466, 462, 463. Students must demonstrate competence in computer information processing and problem solving.	
Specialization Requirements (see below)	71-85
Total	121-135

BUSINESS EDUCATION SPECIALIZATION

Accounting 210 or 220	3
Management 170 or 304	3
Office Systems and Specialties 111	3
Workforce Education and Development 258 and/or 395, 302, 310, 415G	7

Courses in selected certification areas: accounting, business computer programming/systems, basic business, information processing or marketing	21-35
A grade of C or better is required in all business and education courses.	
Certification Requirements	(41) + 34
Professional Education Sequence (See above).....	28
University Core Curriculum Requirements for Teacher Certification	(41) ¹
ENGL 101 and 102; SPCM 101; MATH 110 or 113; CHEM 106, GEOL 110 or PHYS 101; PLB 115 or 117; AD 101, ENGL 203, HIST 201, MUS 103 or THEA 101; ENGL 121 or 204; FL 101, HIST 101a or b or PHIL 103a or 103b; HIST 110; POLS 114; ANTH 202 or SOC 215; AD 310i, FL 310i or ENGL 308i; HED 101 or PE 101	
Additional courses required for Teacher Certification	6
Psychology 102 and 3 hours of science electives	
Total	71-85
EDUCATION TRAINING AND DEVELOPMENT SPECIALIZATION	
Workforce Education and Development 258 and/or 395, 259 or prescribed courses to complete technical speciality, 460, 468, 469, 474, 495 or 496	68
Educational Psychology 307 or other approved elective	3
Total	71
HOME ECONOMICS SPECIALIZATION	
Workforce Education and Development 320, 321 or 322, 431	7
Related home economics core and restricted electives	45
Certification or Career Electives	19-31
Certification Requirements	(41) + 31
University Core Curriculum Requirements for Teacher Certification:	(41) ¹
ENGL 101 and 102; SPCM 101; MATH 110 or 113; CHEM 106, GEOL 110 or PHYS 101; PLB 115 or 117; AD 101, ENGL 203, HIST 201, MUS 103 or THEA 101; ENGL 121 or 204; FL 101, HIST 101a or PHIL 103a; HIST 110; POLS 114; ANTH 202 or SOC 215; AD 310i, FL 310i or ENGL 308i; HED 101 or PE 101	
Professional Education Requirements	28
Additional course required for Teacher Certification: Psychology 102	3
or	
Career electives for educational services/extension	19
Total	71-83
ADMINISTRATIVE SERVICES TRAINING SPECIALIZATION	
Accounting 210 or 220	3
Management 170 or 304	3
Finance 280	3
Office Systems and Specialities 113, 233, 341, 414, 415	15
Information Management Systems 102, 111, 212	9
Workforce Education and Development 302, 417, 418, 496, 412 or Office Systems and Specialities 412	15
Electives	23

Total	71
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VOCATIONAL TEACHER DEVELOPMENT SPECIALIZATION (NON-ENTITLEMENT) ²

Workforce Education and Development 258, 259, or prescribed courses to complete technical speciality, 460, 466, 468, 474, 495	71
Total	71

¹The hours in parenthesis are already counted in the University Core Curriculum requirements above.
²For secondary health occupations, industrial and other vocational teachers with provisional or temporary provisional certificates. Completion does not constitute entitlement to regular secondary school certification.

Minor

A minor in Workforce Education and Development consists of 20 hours. Minors are planned by the student and adviser within each of the five specializations.

CLOTHING AND TEXTILES

Students majoring in clothing and textiles prepare for positions in industrial or commercial businesses in various apparel design or allied design occupations and/or positions in retail companies as buyers, managers, or visual merchandisers. Design and retailing courses available to students include topical areas such as fashion merchandising, buying, textiles, fashion design, pattern making, and apparel production.

Bachelor of Science Degree, College of Education

University Core Curriculum Requirements	41
Psychology 102, Economics 113	6
Requirements for Major in Clothing and Textiles	79
Core requirements	25
Twenty-five hours of upper division work approved by the Department of Workforce Education and Development in the following areas: careers in fashions (334), survey of clothing (336), clothing for consumers (337), apparel accessories (343), textiles (345a,b), visual merchandising (346), fashion motivation (347), and textile product testing (445).	
Specialization requirements (see below)	54
Total	120

APPAREL DESIGN SPECIALIZATION

Workforce Education and Development 338a, 338b, 340, 342, 344, 348, 439 or 449, 440, 444, 446, 448	33
Art and Design 100a, 110, 206	9
Professional electives	12
Total	54

RETAILING SPECIALIZATION

Workforce Education and Development 306, 339, 341b, 341a or c, 349, 350, 442	17
Art and Design 100a	3
Accounting 210 or 220	3
Management 301 or 304 or Psychology 320 or 323	3
Marketing 304, 363, 401 plus 3 additional hours in Marketing	12
Professional electives	16
Total	54

Minor

A minor in clothing and textiles is intended to provide background that will assist students in pursuing their career goals or other interests. A minor in clothing and textiles must have approval of the program coordinator. At least 16 hours of clothing and textiles courses are required as follows:

345a	2-4
336 and 337 or 347	6
Other clothing and textile courses	7

Workforce Education and Development Faculty

Allen, Lorie, Assistant Instructor, M.S., Southern Illinois University, 1986.

Anderson-Yates, Marcia, Professor, Ph.D., Southern Illinois University, 1975.

Aydt, Roger, Visiting Assistant Professor, Ph.D., Southern Illinois University, 1987.

Bailey, Larry J., Professor, Ed.D., University of Illinois, 1968.

Baker, Clara Mae, Associate Professor, Ph.D., Ohio State University, 1989.

Beebe, Thomas, Visiting Assistant Professor, Ph.D., Southern Illinois University, 1982.

Bortz, Richard F., Professor, Ph.D., University of Minnesota, 1967.

Bourne, Shirley A., Visiting Assistant Professor, Ph.D., Southern Illinois University, 1983.

Bubnas, Phyllis, Assistant Professor, M.S., Southern Illinois University, 1960.

Builda, Theodore, Associate Professor, Ph.D., Cornell University, 1968.

Carter, Rose Mary, Assistant Professor, Ph.D., Purdue University, 1970.

Coleman, Dorothy Z., Visiting Assistant Professor, Ed.D., University of Georgia, 1985.

Cunningham, William J., Visiting Assistant Professor, Ed.D., University of Tennessee, 1976.

Diggle, Patricia, Lecture, M.S., Southern Illinois University, 1994.

Dirksen, Dennis, Visiting Assistant Professor, Ed.D., Utah State University, 1969.

Duree, James F., Visiting Assistant Professor, Ed.D., University of Missouri, 1979.

Gooch, Bill G., Professor, Ed.D., University of Tennessee, 1973.

Hagler, Barbara, Lecturer, Ph.D., Arizona State University, 1991.

Hall, M. Eugene, Visiting Assistant Professor, Ph.D., Ohio State University, 1982.

Hall, Shirley, Visiting Assistant Professor, Ed.D., Virginia Polytechnic Institute and State University, 1989.

Harbert, Donald L., Visiting Associate Professor, Ed.D., University of Florida, 1968.

Huck, John F., Associate Professor, Ed.D., University of Illinois, 1973.

Hunter, Wallace D., Visiting Assistant Professor, Ph.D., The Florida State University, 1974.

Kidd, Laura K., Assistant Professor, Ph.D., Iowa State University, 1994.

King, Jacquelyn, Lecturer, Ph.D., Southern Illinois University, 1986.

King, Janice E., Lecturer, M.S., Southern Illinois University, 1978.

Klessinger, Sidney, Visiting Instructor, B.S., Southern Illinois University, 1981.

Legacy, James, Professor, Ph.D., Cornell University, 1976.

Phillips, Dianna G., Visiting Assistant Professor, Ph.D., State University of New York at Buffalo, 1995.

Phipps, Jeffrey R., Visiting Assistant Professor, Ed.D., U.S. International University, 1983.

Plessman, Connie K., Visiting Assistant Professor, Ph.D., University of Nebraska, 1985.

Reneau, Fred, Professor, Ed.D., Virginia Polytechnic Institute and State University, 1979.

Rodgers, William L., Visiting Instructor, M.S., Southern Illinois University, 1982.

Shaw, Mari, Visiting Assistant Professor, Ph.D., University of Minnesota, 1984.

Shields, Bill J., Assistant Professor, M.S.Ed., Southern Illinois University, 1963.

Silliman, Roger, Visiting Assistant Professor, Ph.D., University of Southern California, 1981.

Sloan, Donald L., Visiting Assistant Professor, Ph.D., University of Illinois at Urbana-Champaign, 1994.

Stadt, Ronald W., Professor, Ed.D., University of Illinois, 1962.

Stitt, Thomas R., Professor, Ph.D., Ohio State University, 1967.

Sullivan, James A., Professor, Ed.D., West Virginia University, 1967.

Threw, Janice, Lecturer, M.S.Ed., Southern Illinois University, 1990.

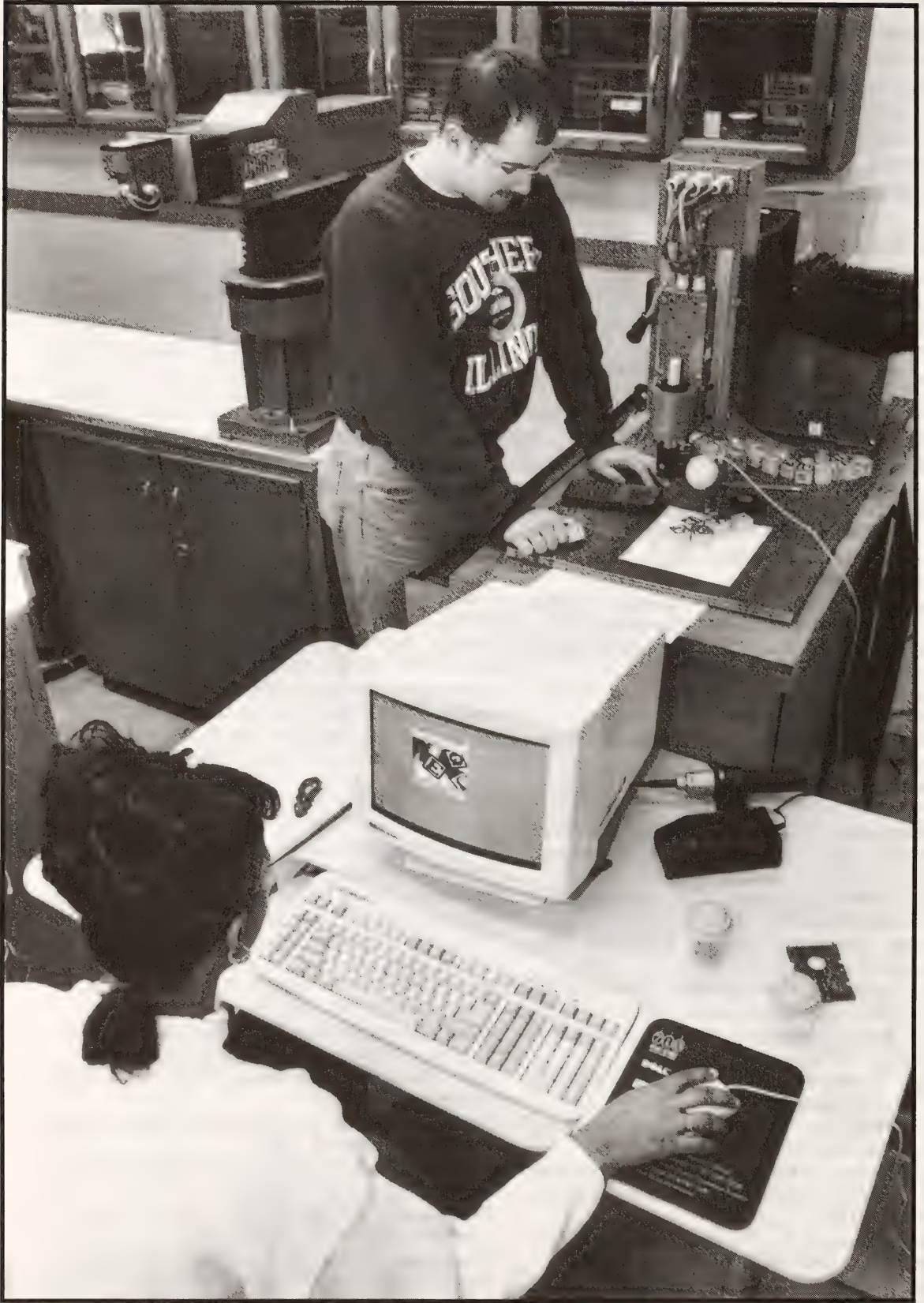
Trueblood, Michelle L., Lecturer, M.S., Southern Illinois University, 1992.

Washburn, John S., Professor and Chair, Ed.D., University of Illinois, 1977.

Workman, Jane, Professor, Ph.D., Purdue University, 1982.

Zoology

(SEE ZOOLOGY IN THE COLLEGE OF SCIENCE)



College of Engineering

Juh W. Chen, *Dean*

Departments: Civil Engineering; Electrical Engineering; Mechanical Engineering and Energy Processes; Mining Engineering; Technology

The College of Engineering offers the following majors leading to the Bachelor of Science degree:

Civil Engineering	Industrial Technology
Electrical Engineering	Manufacturing Technology Speciali- zation
Computer Engineering Specialization	Mining Technology Specialization (Admission to the mining tech- nology program is temporarily closed.)
Engineering Technology	Mechanical Engineering
Electrical Engineering Technology Specialization	Mining Engineering
Mechanical Engineering Technology Specialization	

Engineering is the profession in which a knowledge of the mathematical and natural sciences gained by study, experience, and practice is applied with judgment to develop ways to utilize economically the materials and forces of nature for the benefit of people.

All of the engineering programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. The engineering technology program with specializations in electrical and mechanical engineering technology is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology. The industrial technology program is accredited by the National Association of Industrial Technology.

Specific requirements are listed for the various majors below. Six academic programs: civil engineering, electrical engineering, mechanical engineering, mining engineering, engineering technology and industrial technology serve students who have different career goals.

Civil Engineering. The civil engineering program leading to the Bachelor of Science degree is designed to provide the student with the broad educational background essential to modern civil engineering practice. Technical electives in the senior year permit greater breadth and additional depth in such areas as structural and geotechnical engineering, hydraulic engineering, environmental engineering and computational mechanics and surveying.

Electrical Engineering. The Department of Electrical Engineering offers courses in the major areas of electrical and computer engineering. Students who choose the electrical engineering major prepare themselves for professional and technical employment or graduate studies leading to advanced degrees. Employment opportunities exist within a wide range of organizations, such as governmental laboratories; consumer goods manufacturers; and telecommunications, electrical power, computer, and microelectronic companies. flexibility in this major allows students to choose among courses in applications and theory of circuits, systems, communications, digital systems, controls, electronics, instrumentation, electromagnetics, and power systems.

Mechanical Engineering. Mechanical engineering is one of the most broadly based of the traditional engineering disciplines. Mechanical engineers design and develop a wide variety of systems for conversion, transmission, and utilization of energy; for material processing and handling and packaging; for transportation; for environmental control; and for many other purposes for the benefit of humanity. Therefore the curriculum contains a broad foundation in mathematics and the basic and engineering sciences, followed by more concentrated study in energy and machine systems. Mechanical engineers may be found in a variety of assignments including planning and design, research and development, supervision of installation and operation of complex systems, and management.

Mining Engineering. Mining engineers engage in planning, design, development, and management of surface and underground mining operations for exploitation of the earth's mineral deposits. The mining engineering program prepares graduates to meet the challenges of the mining industry. Coursework in the program includes such areas as surface and underground mining systems, mine ventilation, ground control and rock mechanics, mineral coal processing, material handling systems, mineral economics, mine health and safety engineering, operations research, and computer-aided mine design. Facilities include modern, well equipped rock mechanics, mine ventilation and mineral processing laboratories.

After completing the program, the graduate may work in an engineering or management position for mining industries, equipment manufacturing concerns, research organizations, or government agencies. The coursework also provides strong preparation for further study at the graduate level.

Engineering Technology. Engineering technology is that part of the technological field in which engineering knowledge and scientific methods are combined with hands-on technical skills to support engineering activities. It lies in the occupational spectrum between that of the technician and the engineer with specific responsibilities depending upon the nature of the training and requirements of the job but lying more closely to engineering. Graduates are prepared to deal with technical and production problems, and to apply their knowledge to such activities as development, design, construction, maintenance and operational problems.

Industrial Technology. Industrial technology is a management-oriented technical profession that is built upon a sound knowledge and understanding of materials, processes, technical management, and human relations; and a proficiency level in the physical sciences, mathematics, and technical skills to permit the graduate to capably resolve technical-managerial and production problems. Graduates of this program are prepared for positions in processes, safety, quality control, supervision, robotics, methods analysis, and computer-aided manufacturing.

Readmission to the College

The readmission policy for the College of Engineering is the same as the University policy for a first suspension: students placed on academic suspension may seek reinstatement after a minimum of two semesters' interruption but must furnish tangible evidence that additional education can be successfully undertaken. Students placed on academic suspension a second or subsequent time may reapply after an interval of no less than two calendar years. For more information on procedures and requirements for readmission, students are advised to consult the Engineering advisement office.

Course Sequence

It is important that required courses in the program be taken in the proper sequence. Sequence guidelines are available from the college advisement office and the departmental offices. Courses on the 300-and 400-levels are reserved for juniors and seniors.

Transfer Students

Students enrolled in community colleges who plan to transfer to Southern Illinois University at Carbondale should take courses that provide backgrounds in mathematics, physical sciences, social sciences, and humanities. Introductory foreign language courses are not acceptable. Students may transfer at any time, but there are advantages in having completed a baccalaureate-oriented associate-degree program. Community college students can complete specific Southern Illinois University at Carbondale course requirements which include 6 hours of English composition and speech, 8 hours of university physics, 7 hours of chemistry, 11 to 17 hours of mathematics (including calculus and differential equations), 5 hours of statics and dynamics, and 13 to 15 hours of social sciences and humanities. All students including transfer students holding the associate degree in a baccalaureate-oriented program must have 16 hours of social sciences and humanities including a junior-level course taken at a senior institution. This junior-level course must provide a sequence in social science or humanities discipline. Calculus and engineering mechanics are prerequisites for most junior-level engineering courses.

All transfer credit from an accredited institution whose work is acceptable at the University, both two-year and four-year, will be used in fulfillment of program requirements. Equivalencies for courses will be determined by the departmental chair, advisement office, or office of the dean, College of Engineering.

Students who are attending a public Illinois community college and contemplating application to the College of Engineering should obtain program information which has been prepared for their particular community college.

Qualified candidates for the Capstone Option are accepted with majors in industrial technology. The Capstone Option is described in Chapter 3.

Location

Administrative offices of the college are located in the Engineering Building near Lake-on-the-Campus.

Civil Engineering (Department, Major, Courses)

The Department of Civil Engineering offers a program leading to a Bachelor of Science degree in civil engineering.

The civil engineering curriculum is designed to give the student a foundation in the basic principles used in the practice of civil engineering and how these principles are applied both in theory and design. Civil engineering is often called a people-serving profession. This program prepares the student to work in a wide range of civil engineering career options.

CIVIL ENGINEERING MAJOR

Civil Engineering is broad in scope, and it encompasses a number of technical disciplines. A civil engineer may deal with research, planning, analysis, design, construction, operation and maintenance of buildings; bridges; dams; harbors; water and power facilities; water works; sewage, nuclear and toxic waste disposal facilities; transportation systems such as highways, railways, waterways, airports and pipe-

lines. The Civil Engineering program leading to the Bachelor of Science degree at SIUC is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, the recognized agency for accrediting engineering curricula in the United States. The program is designed to provide the students with the broad educational background essential to modern Civil Engineering practice with training in specialized areas of computational mechanics, environmental engineering, geotechnical engineering, hydraulic engineering, structural engineering and surveying engineering.

Bachelor of Science Degree, College of Engineering

<i>University Core Curriculum Requirements</i>	41 ¹
Foundation Skills	12
English 101, 102	6
Mathematics (substitute Mathematics in major)	3 ¹
Speech Communication 101	3
Disciplinary Studies	23
Fine Arts	3
Human Health	2
Humanities	6 ^{2,3}
Science (substitute Physics and Chemistry in major)	6 ¹
Social Science	6 ^{2,3}
Integrative Studies	6
Multicultural	3
Interdisciplinary	3
<i>Requirements for Major in Civil Engineering</i>	(9) + 86
Mathematics and Basic Sciences	(9) + 23
Mathematical Analysis	(3) + 14
Mathematics 150, 250, 251 and 305	(3) + 11 ²
Engineering 351	3
Basic Sciences	(6) + 9
Physics 205a,b; 255a,b	(3) + 5 ²
Chemistry 200, 201, 210	(3) + 4 ²
Engineering Core Courses	20
Engineering 102, 222a, 260a,b, 300, 311, 313, 361	
Civil Engineering Core Courses	30
Civil Engineering 101, 310, 320, 330, 340, 442, 444, 474, 495a,b and any one of the following: 410, 411, 415, 419	
Approved Technical Electives	13 ⁴
<i>Total</i>	127

¹Courses required for the major will apply toward nine hours of University Core Curriculum, making a total of 41 in that area.

²Engineering requirements for University Core Curriculum are more restrictive than those of the University as a whole.

³Transfer students holding an associate degree in a baccalaureate-oriented program must have a sequence of courses in social science or humanities. See departmental adviser for an approved course. Students transferring from other programs or institutions will be required to (a) complete a course sequence in the humanities or social sciences which includes a junior level course or (b) meet the University Core Curriculum requirements for engineering students.

⁴The cumulative engineering design content in each student's program must be at least 18 semester hours. The number of hours of design content in each Civil Engineering course are determined by the Department of Civil Engineering and is identified in the *Civil Engineering Undergraduate Handbook*.

Civil Engineering Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
Core Human Health.....	2	-	Core Humanities.....	-	3
Core Humanities.....	3	-	SPCM 101.....	-	3
ENGL 101,102.....	3	3	MATH 251, 305.....	3	3
MATH 150, 250.....	4	4	CHEM 210.....	3	-
CHEM 200, 201.....	-	4	PHYS 205b, 255b.....	4	-
PHYS 205a,255a.....	-	4	ENGR 222a.....	2	-
ENGR 102.....	2	-	ENGR 260b.....	3	-
ENGR 260a.....	-	2	ENGR 311.....	-	3
CE 101.....	2	-	CE 310.....	-	3
Total.....	16	17	Total.....	15	15
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
Core Social Science.....	3	3	Core Fine Arts.....	-	3
ENGR 313.....	3	-	Core Integrative Studies.....	3	3
ENGR 351.....	3	-	Tech Electives.....	6	7
ENGR 361.....	2	-	CE 442.....	3	-
CE 320, 330.....	3	3	CE 495a.....	1	-
CE 340.....	3	-	CE 495b.....	-	3
CE 410, 411, 415 or 419.....	-	3	ENGR 300.....	3	-
CE 444.....	-	3			
CE 474.....	-	3			
Total.....	17	15	Total.....	16	16

Civil Engineering Transfer Students Suggested Curricular Guide¹

THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
ENGR 311, 313.....	6	-	ENGR 300.....	3	-
ENGR 351.....	3	-	CE 444.....	3	-
ENGR 361.....	2	-	Tech Electives.....	4	9
CE 101.....	2	-	CE 442.....	3	-
CE 310, 320.....	3	3	CE 495a.....	1	-
CE 330.....	-	3	CE 495b.....	-	3
CE 340.....	-	3			
CE 410, 411, 415 or 419.....	-	3			
CE 474.....	-	3			
Total.....	16	15	Total.....	14	12

¹This assumes that the transfer student satisfied the university core curriculum requirements and has had all of the Mathematics, Chemistry and Physics required for the Civil Engineering curriculum. Furthermore, this assumes that the transfer student has had the equivalent of Engineering 102, 222, 260a and 260b. Community College transfer students should make special note of the requirement that a minimum of 60 semester hours must be completed at a senior institution. This would require an additional 3 semester hour course elective to supplement the 57 hours listed above.

Civil Engineering Faculty

Bravo, Rolando, Assistant Professor, Ph.D., University of Houston, 1990.

Chevalier, Lizette R., Assistant Professor, Ph.D., Michigan State University, 1994.

Cook, Echol E., Professor, *Emeritus*, Ph.D., Oklahoma State University, 1970.

Craddock, James N., Associate Professor, Ph.D., University of Illinois at Urbana-Champaign, 1979.

Davis, Philip K., Professor, *Emeritus*, Ph.D., University of Michigan, 1963.

DeVantier, Bruce A., Associate Professor, Ph.D., University of California at Davis, 1983.

Eichfeld, William F., Assistant Professor, M.S., University of Wisconsin at Madison, 1973.

Evers, James L., Associate Professor and Associate Dean, Ph.D., University of Alabama, 1969.

Frank, Roy R., Jr., Assistant Professor, M.S., Southern Illinois University at Carbondale, 1983.

Ghafoori, Nader, Associate Professor, Ph.D., University of Miami-Coral Gables, 1986.

Hamed, Jihad, T., Assistant Professor, Ph.D., Louisiana State University, 1990.

Kassimali, Aslam, Professor, Ph.D., University of Missouri at Columbia, 1976.

Molls, Thomas R., Assistant Professor, Ph.D., Washington State University, 1993.

Nowacki, C. Raymond, Associate Professor, *Emeritus*, Ph.D., University of Illinois at Urbana-Champaign, 1965.

Puri, Vijay K., Associate Professor, Ph.D., University of Missouri at Rolla, 1984.

Ray, Bill T., Associate Professor, Ph.D., University of Missouri at Rolla, 1984.

Rubayi, Najim, Professor, *Emeritus*, Ph.D., University of Wisconsin, 1966.

Sami, Sedat, Professor and *Chair*, Ph.D., University of Iowa, 1966.

Yen, Shing-Chung, Professor, Ph.D., Virginia Polytechnic Institute and State University, 1984.

Zeigler, Timothy W., Associate Professor, M.S., University of Illinois at Urbana - Champaign, 1969.

Electrical Engineering (Department, Major, Courses)

The Department of Electrical Engineering offers courses in the areas of electrical and computer engineering. The Department offers a Bachelor of Science in Electrical Engineering and a Bachelor of Science in Electrical Engineering with specialization in Computer Engineering. Students who choose electrical engineering prepare themselves for professional and technical employment or graduate studies leading to advanced degrees. Employment opportunities exist within a wide range of organizations, such as governmental laboratories; consumer goods manufacturers; and telecommunications, electric power, computer and microelectronic companies. Flexibility in this major allows students to choose among courses in applications and theory of circuits, communications, digital systems, controls, electronics, instrumentation, electromagnetics and power systems. Students may choose the Electrical Engineering degree with a specialization in Computer Engineering.

The program in electrical engineering is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

Bachelor of Science Degree, College of Engineering

ELECTRICAL ENGINEERING MAJOR

<i>University Core Curriculum Requirements</i>	41 ¹
<i>Requirements for Major in Electrical Engineering</i>	(9) + 84
Basic sciences	9
Physics 205a, 205b, 255a, 255b	(3) + 5
Chemistry 200, 201, 210	(3) + 4
Mathematics	14
Mathematics 150, 250, 251, 305	(3) + 11
Approved Mathematics elective	3
General Engineering	4
Mechanical Engineering 361 and one approved Engineering Science elective.	
Required Electrical Engineering courses	41
Electrical Engineering 101, 222, 225, 235, 327, 336, 345, 355, 375, 385, 465, 495 (Capstone design course)	
Approved Electives	16
The approved electives must include at least 6 hours of Engineering Design and at least 4 hours of Engineering Science.	
<i>Electives</i>	<u>3</u>
<i>Total</i>	128

Electrical Engineering Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
MATH 150, 250	4	4	MATH 251, 305	3	3
CHEM 200, 201	4	-	PHYS 205a,b	3	3
CHEM 210	-	3	PHYS 255a,b	1	1
ENGL 101, 102	3	3	SPCM 101	3	-
EE 222	-	3	EE 225, 235	3	4
Fine Art	3	-	Social Science	-	3
Social Science	-	3	Humanities	3	3
EE 101	3	-			
Total	17	16	Total	16	17
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
EE 336	3	-	MATH Elective	3	-
EE 375	-	3	Eng. Science Elective	-	3
EE 345	4	-	EE 495a,b	1	3
EE 355	-	3	Integrative Studies	3	3
EE 327	4	-	EE Elective	8	4
EE 465	-	3	Free Elective	-	3
EE 385	4	-			
ME 361	-	1			
EE Elective	-	4			
Human Health	-	2			
Total	15	16	Total	15	16

ELECTRICAL ENGINEERING MAJOR – COMPUTER ENGINEERING SPECIALIZATION

University Core Curriculum Requirements	41 ¹
Requirements for Major in Electrical Engineering with a specialization in Computer Engineering	(9) + 84
Basic sciences	9
Physics 205a, 205b, 255a, 255b	(3) + 5
Chemistry 200, 201, 210	(3) + 4
Mathematics	14
Mathematics 150, 250, 251, 305	(3) + 11
Approved Mathematics elective	3
General Engineering	4
Mechanical Engineering 361 and one approved Engineering Science elective.	
Required Electrical Engineering courses	41
Electrical Engineering 101, 222, 225, 235, 327, 336, 345, 355, 375, 385, 465, 495 (Capstone design course)	
Approved Electives	19
The approved electives must include at least 6 hours of Engineering Design and at least 4 hours of Engineering Science to be chosen from the following: Electrical Engineering 424, 425, 427, 428, 456, 468 and approved Computer Science electives.	
Total	128

¹Courses in parenthesis required for the major will apply toward 9 hours of University Core Curriculum, making a total of 41.

Computer Engineering Suggested Curricular Guide

THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
EE 336	3	-	ME 361	1	-
EE 375	-	3	Eng. Science Elective	-	3
EE 345	4	-	EE 495a,b	1	3
EE 355	-	3	Integrative Studies	3	3
EE 327	4	-	Math Elective	3	-
EE 465	-	3	Approved EE/CS Elective	6	6
EE 385	4	-	Human Health	2	-
Approved EE/CS Elect	-	3			
EE 427	-	4			
<i>Total</i>	15	16	<i>Total</i>	16	15

Electrical Engineering Faculty

Botros, Nazeih, Associate Professor, Ph.D., University of Oklahoma, 1985.

Brown, David P., Professor, Ph.D., Michigan State University, 1961.

Daneshdoost, Morteza, Associate Professor, Ph.D., Drexel University, 1984.

Dhali, Shirshak, Professor, Ph.D., Texas Tech University, 1984.

Etienne-Cummings, Ralph R., Assistant Professor, Ph.D., University of Pennsylvania, 1994.

Feiste, Vernold K., Associate Professor, Ph.D., University of Missouri at Columbia, 1966.

Galanos, Glafkos, Professor and *Chair*, University of Manchester, England, 1970.

Goben, Charles A., Professor, Ph.D., Iowa State University, 1965.

Gupta, Lalit, Associate Professor, Ph.D., Southern Methodist University, 1986.

Harackiewicz, Frances J., Associate Professor, University of Massachusetts at Amherst, 1990.

Hatziaodoniu, C., Associate Professor, Ph.D., West Virginia University, 1988.

Hu, C. J., Professor, Ph.D., University of Colorado-Boulder, 1966.

Kagaris, Dimitrios N., Assistant Professor, Ph.D., Dartmouth College, 1994.

Manzoul, Mahmoud, Associate Professor, Ph.D., West Virginia University, 1985.

Margon, Irving, Visiting Assistant Professor, *Emeritus*, M.S., University of Southern California at Los Angeles, 1948.

Pourboghrat, Farzad, Associate Professor, Ph.D., University of Iowa, 1984.

Purcell, Kay, Visiting Instructor, M.S., Southern Illinois University, 1978.

Rawlings, Charles A., Professor, Ph.D., Southern Illinois University, 1974.

Sayeh, Mohammad, Associate Professor, Ph.D., Oklahoma State University, 1985.

Schoen, Alan, Professor, Ph.D., University of Illinois, 1958.

Smith, James G., Professor, *Emeritus*, Ph.D., University of Missouri at Rolla, 1967.

Viswanathan, R., Professor, Ph.D., Southern Methodist University, 1983.

Engineering Technology (Major, Courses)

Engineering technology is that part of the technological field which requires the application of scientific and engineering knowledge and methods combined with technical skills in support of engineering activities; it lies in the occupational spectrum between the technician and the engineer at the end of the spectrum closest to the engineer.

All curricula in engineering technology are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology. These curricula are the electrical engineering technology and the mechanical engineering technology specializations. For each curriculum, a minimum of 30 hours in engineering technology courses must be taken in residence at Southern Illinois University at Carbondale.

Bachelor of Science Degree, College of Engineering**ENGINEERING TECHNOLOGY MAJOR — ELECTRICAL ENGINEERING TECHNOLOGY SPECIALIZATION**

The electrical engineering technology specialization is designed to prepare technologists who are capable of technical design and who can contribute to the de-

velopment, production, testing, and installation of electrical and electronic devices, circuits, and systems. In addition, graduates are capable of participation in the planning and installation of power distribution systems and operating and maintaining complex electrical systems. Graduates of the program are employed in communications, power, electronics, sales, manufacturing, and other fields.

University Core Curriculum Requirements	41
Foundation Skills	12
English 101, 102	6
Mathematics (substitute Mathematics in major)	3
Speech Communication 101	3
Disciplinary Studies	23
Fine Arts	3
Human Health	2
Humanities	6
Science (substitute Physics in major)	6
Social Science	6
Integrative Studies	6
Multicultural	3
Interdisciplinary	3
Requirements for Major in Engineering Technology with Electrical Engineering Technology Specialization	(6) + 84 ¹
Physics 203a,b, 253a,b; Chemistry 140a	(3) + 9
Mathematics 111, 150, 250	(3) + 10
Management 202	3
Engineering 222	2
Engineering Technology 238, 245a, 304a, 304b, 332a, 332b, 403a, 403b, 437a, 437b, 438a, 438b, 439	52
Technical electives	8
Total	125

¹ Courses in parenthesis will also apply towards 6 hours in the University Core Curriculum, making a total of 41 .

Electrical Engineering Technology Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
PLB 115, 117, ZOOL 115	-	3	Select ¹	-	6
Select ¹	3	5	ENGR 222	-	2
ENGL 101, 102	3	3	ET 238	4	-
CHEM 140 ²	4	-	ET 245a	4	-
MATH 111 ²	5	-	SPCM 101	3	-
MATH 150	-	4	MATH 250	-	4
			PHYS 203a,b ²	3	3
			PHYS 253a,b	1	1
Total	15	15	Total	15	16
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
Select ¹	6	3	ET 403a,b	4	4
MGMT 202	-	3	ET 437a,b	4	4
ET 304a,b	4	4	ET 438a,b	4	4
ET 332a,b	4	4	ET 439	-	4
Technical Electives	3	2	Technical Elective	3	-
Total	17	16	Total	15	16

¹ See University Core Curriculum requirement
² Substitutes for University Core Curriculum

ENGINEERING TECHNOLOGY MAJOR – MECHANICAL ENGINEERING TECHNOLOGY
SPECIALIZATION

The mechanical engineering technology specialization is designed to prepare graduates for a career in power and manufacturing industries; it provides a diverse background in general mechanical technology focusing in such areas as fluid power, computer-aided drawing, thermal science, mechanical design technology and mechanical aspects of manufacturing systems. Graduates are employed by electric utilities, manufacturing firms, architectural/engineering firms, and other industries which deal with mechanical products or equipment.

<i>University Core Curriculum Requirements</i>	41
Foundation Skills	12
English 101, 102	6
Mathematics (substitute Mathematics in major)	3
Speech Communication 101	3
Disciplinary Studies	23
Fine Arts	3
Human Health	2
Humanities	6
Science (substitute Physics in major)	6
Social Science	6
Integrative Studies	6
Multicultural	3
Interdisciplinary	3
<i>Requirements for Major in Engineering Technology with Mechanical Engineering Technology Specialization</i>	(6) + 84 ¹
Physics 203a,b, 253a,b; Chemistry 140a	(3) + 9
Mathematics 111, 150, 250	(3) + 10
Management 202	3
Engineering 222	2
Engineering Technology 103, 104, 209, 245a, 260a, 260b, 311, 312, 313, 317, 318, 342, 390, 401, 404, 424a, 445, 455	54
Technical electives	6
<i>Total</i>	125

¹Courses in parenthesis will also apply toward 6 hours in the University Core Curriculum, making a total of 41 in that area.

Mechanical Engineering Technology Suggested Curricular Guide

FIRST YEAR		FALL	SPRING	SECOND YEAR		FALL	SPRING
PLB 115 ,117, ZOOL 115	-		3	Select ¹	2		3
Select ¹	-		3	SPCM 101	3		-
ENGL 101, 102	3		3	ENGR 222	-		2
CHEM 140a ²	4		-	ET 245a	-		4
ET 103, 104	3		3	ET 260a,b	3		3
MATH 111 ²	5		-	MATH 250	4		-
MATH 150	-		4	PHYS 203a,b ²	3		3
				PHYS 253a,b	1		1
<i>Total</i>	15		16	<i>Total</i>	16		16

THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
Select ¹	9	3	Select ¹	3	-
ET 311	-	3	MGMT 202	-	3
ET 312	-	3	ET 209	-	3
ET 313	-	3	ET 342	2	-
ET 317	3	-	ET 401	3	-
ET 318	-	3	ET 403	3	-
ET 390	3	-	ET 424a	3	-
			ET 445	-	3
			ET 455	-	3
			Technical Electives	3	3
Total	15	15	Total	17	15

¹ See "University Core Curriculum" requirements
² Substitutes for "University Core Curriculum"

Faculty

(SEE TECHNOLOGY)

Industrial Technology (Major, Courses)

The industrial technology major has as its objective the training of qualified personnel who can develop and direct the production and distribution of products and services. There are two specializations: manufacturing technology and mining technology; however, the mining technology specialization is presently inactive.

The major is designed to prepare management-oriented technical professionals in the economic-enterprise system. Industrial technology professionals will be involved with:

1. The application of significant knowledge of theories, concepts, and principles found in the humanities and the social and behavioral sciences, including a thorough grounding in communication skills.
2. The understanding and ability to apply principles and concepts of mathematical and physical sciences.
3. The application of concepts derived from, and current skills developed in, a variety of technical disciplines including, but not limited to, robotics, processes, computer-aided manufacturing, quality control, motion and time study, plant layout, facilities planning, industrial safety, production and inventory control, human relations, and computer-aided drafting.

The industrial technology curriculum is flexible enough to provide the means whereby graduates of two-year occupational programs may obtain a Bachelor of Science degree. A graduate of a two-year industrially-oriented occupational program, such as aviation, construction, drafting, data processing, electronics, machine tool, mechanical, and mining may have an appropriate preparation to pursue a Bachelor of Science degree with a major in industrial technology.

Students with work related experience may receive credit toward the degree via Industrial Technology 258. Additional flexibility in earning credit toward the degree is possible through cooperative work experience provided meaningful employment is available.

A Capstone option may be available in the industrial technology major and is explained in Chapter 4 of this bulletin. Students holding associate degrees of at least 60 semester hours in non-baccalaureate-oriented programs or equivalent certification with a minimum grade point average of 2.25 are qualified. For the industrial technology major, the associate degree or equivalent certification should be in an industry-related field. This option permits qualified students to fulfill their degree requirements by completing 60 semester hours of work approved by the Capstone adviser.

Each individual's program of study may differ according to the previous academic work.

The industrial technology program is accredited by the National Association of Industrial Technology. For each curriculum, a minimum of 30 hours in industrial technology courses must be taken in residence at Southern Illinois University at Carbondale.

Bachelor of Science Degree, College of Engineering

INDUSTRIAL TECHNOLOGY MAJOR – MANUFACTURING TECHNOLOGY SPECIALIZATION

The manufacturing technology specialization is designed to prepare graduates for supervisory and technical management positions in manufacturing. Curriculum requirements are broad based to enable the graduate to obtain employment in manufacturing areas such as quality control, processes, safety, methods analysis, and computer-aided manufacturing/robotics. The Capstone option feature is available for students and is described in Chapter 3 of this bulletin.

<i>University Core Curriculum Requirements</i>	41
Foundation Skills	12
English 101, 102	6
Mathematics (substitute Mathematics in major)	3
Speech Communication 101	3
Disciplinary Studies	23
Fine Arts	3
Human Health	2
Humanities	6
Science (substitute Physics in major for 3 hours)	6
Social Science	6
Integrative Studies	6
Multicultural	3
Interdisciplinary	3
<i>Requirements for Major in Industrial Technology with a Specialization in Manufacturing Technology</i>	(6) + 79 ¹
Industrial Technology Core Requirements	28-29
Physics 203a,b, 253a,b	(3) + 5
Mathematics 111	(3) + 2
Mathematics 140 or Industrial Technology 307	4
Psychology 323 or Industrial Technology 240	3
Computer Science 212 or Industrial Technology 270	3
Industrial Technology 105, 305, 382, 475	12
Specialization in Manufacturing Technology	50-51
Industrial Technology 208, 375, 390, 392, 440, 445	18
Technical Electives	30-31
Electives	2
<i>Total</i>	120

INDUSTRIAL TECHNOLOGY MAJOR – MINING TECHNOLOGY SPECIALIZATION

The mining technology specialization is presently inactive. It is designed to prepare graduates for supervisory and technical positions in the mining industry. Course requirements are specifically planned to complement the mining technology background of the community college or technical institute associate degree graduate. The Capstone option feature is available for students and is described in Chapter 3 of this bulletin.

University Core Curriculum Requirements	41
Foundation Skills	12
English 101, 102	6
Mathematics (substitute Mathematics in major)	3
Speech Communication 101	3
Disciplinary Studies	23
Fine Arts	3
Human Health	2
Humanities	6
Science (substitute Physics in major)	6
Social Science	6
Integrative Studies	6
Multicultural	3
Interdisciplinary	3
Requirements for Major in Industrial Technology with a Specialization in Mining Technology	(6) + 79 ¹
Industrial Technology Core Requirements	32
Geology 220	3
Physics 203a,b, 253a,b	(3) + 5
Mathematics 111	(3) + 2
Mathematics 140	4
Psychology 323	3
Computer Science 212	3
Industrial Technology 105, 305, 382, 475	12
Specialization in Mining Technology	47
Industrial Technology 320, 321, 360, 410, 420, 460	18
Engineering Technology 263	3
Technical Electives	26
Total	120

¹Courses in parenthesis that are required in the major will also apply towards 6 hours in the University Core Curriculum, making a total of 41 in that area.

Industrial Technology Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
PLB 115, 117, ZOOL 115	-	3	Select ¹	6	6
Select ¹	5	6	SPCM 101	3	-
ENGL 101, 102	3	3	CS 212	-	3
IT 105	3	-	IT 208	3	-
MATH 111	5	-	IT Elective	-	3
MATH 140	-	4	PHYS 203a,b	3	3
			PHYS 253a,b	1	1
Total	16	16	Total	16	16
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
IT 305	-	3	PSYC 323	-	3
IT 375	3	-	Select	2	-
IT 382	3	-	IT 440	-	3
IT 390	-	3	IT 445	3	-
IT 392	-	3	IT 475	3	-
Select	9	6	Select	6	6
Total	15	15	Total	14	12

¹ See University Core Curriculum requirements
² Substitutes for University Core Curriculum

Faculty

(SEE TECHNOLOGY)

Mechanical Engineering and Energy Processes

(Department, Major [Mechanical Engineering], Courses)

The Department of Mechanical Engineering and Energy Processes offers the Mechanical Engineering major which is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

MECHANICAL ENGINEERING

Mechanical engineering is one of the most broadly based of the traditional engineering disciplines. Mechanical engineers design and develop a wide variety of systems for conversion, transmission, and utilization of energy; for material processing and handling and packaging; for transportation; for environmental control; and for many other purposes for the benefit of humanity. Therefore, the curriculum contains a broad foundation in mathematics and the basic and engineering sciences, followed by more concentrated study in energy and machine systems.

Mechanical engineers may be found in a variety of assignments including planning and design, research and development, supervision of installation and operation of complex systems, and management.

Bachelor of Science Degree, College of Engineering

<i>University Core Curriculum Requirements</i>	41
Foundations	12
English 101, 102, Speech Communication 101 and substitute	
Mathematics	
Disciplinary Studies	23
Fine Arts	3
Human Health	2
Humanities	6 ²
Social Science	6 ²
Science (substitute Physics and Chemistry)	6
Integrative Studies	6
Multicultural	3
Interdisciplinary	3 ²
<i>Requirements for Major in Mechanical Engineering</i>	(9) + 85 ¹
Basic Sciences	(6) + 9
Chemistry 200, 201, 210	
Physics 205a,b, 255a,b	
Mathematics Analysis	17
Mathematics 150, 250, 251, 305	(3) + 11
Engineering 351	3
Mechanical Engineering	62
General: Engineering 102, 222, 400, and Mechanical Engineering	
101a,b and 361	8
Engineering Sciences	28
Engineering 260a, 300, 311, 312, 313 and 335; Mechanical Engineering 261, 302, 309 and either 301 or 400	
Mechanical Engineering 411, 436, 475, 495a,b	12
Engineering Laboratory	3
Mechanical Engineering 401, 403 and 437	

Elective Engineering Design Courses	11 ³	
Total		126

¹Courses in parenthesis will also apply toward 9 hours of University Core Curriculum, making a total of 41 in that area.
²See department guidelines for courses that form a required sequence.
³See department guidelines for appropriate electives.

Mechanical Engineering and Energy Processes Faculty

- Agrawal, Om**, Associate Professor, Ph.D., University of Illinois at Chicago, 1984.

Chen, Juh W., Professor and *Dean*, Ph.D., University of Illinois, 1959.

Chu, Tsuchin, Associate Professor, Ph.D., University of South Carolina, 1982.

Don, Jarlen, Associate Professor, Ph.D., Ohio State University, 1982.

Farhang, Kambiz, Associate Professor, Ph.D., Purdue University, 1989.

Helmer, Wayne Allen, Professor, Ph.D., Purdue University, 1974.

Hesketh, Howard B., Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1968.

Hippo, Edwin J., Professor, Ph.D., Pennsylvania State University, 1977.

Jefferson, Thomas B., Professor, *Emeritus*, Ph.D., Purdue University, 1955.

Kent, Albert C., Professor, *Emeritus*, Ph.D., Kansas State University, 1968.
- Khonsari, Michael, M.**, Professor and *Chair*, Ph.D., University of Texas at Austin, 1983.

Lalvani, S. B., Professor, University of Connecticut, 1982.

Muchmore, Charles B., Professor, Ph.D., Southern Illinois University, 1970.

O'Brien, William S., Associate Professor, Ph.D., West Virginia University, 1972.

Orthwein, William, Professor, *Emeritus*, Ph.D., University of Michigan, 1959.

Rajan, S., Professor, Ph.D., University of Illinois, 1970.

Swisher, James H., Professor, *Emeritus*, Ph.D., Carnegie-Mellon University, 1963.

Tempelmeyer, Kenneth E., Professor, *Emeritus*, Ph.D., University of Tennessee, 1969.

Wittmer, Dale, Professor, Ph.D., University of Illinois, 1980.

Mining Engineering (Department, Major, Courses)

Mining engineers engage in planning, design, development, and management of surface and underground mining operations for exploitation of the earth's mineral deposits. The mining engineering program prepares graduates to meet the challenges of the mining industry with emphasis on coal and aggregate industries. Coursework in the program includes such areas as surface and underground mining systems, mine ventilation, ground control and rock mechanics, mineral and coal processing, material handling systems, mineral economics, mine environment, health and safety engineering, probability and statistics applications, mine equipment maintenance, and computer-aided mine design. Facilities include modern, well-equipped rock mechanics, mine ventilation, mineral processing, materials handling and mine environment laboratories.

After completing the program, the graduate may work in an engineering or management position for mining industries, equipment manufacturing concerns, research organizations, or government agencies. The coursework also provides strong preparation for further study at the graduate level. The mining engineering major is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET).

Bachelor of Science Degree, College of Engineering

University Core Curriculum Requirements	41
Foundation Skills	12
English 101, 102	6
Mathematics (substitute Mathematics in major)	3
Speech Communication 101	3
Disciplinary Studies	23
Fine Arts	3

Human Health	2
Humanities	6
Science (substitute Physics and Chemistry)	6 ^{2,3}
Social Science	6 ^{2,3}
Integrative Studies	6
Multicultural	3
Interdisciplinary	3 ^{2,3}
<i>Requirements for Major in Mining Engineering</i>	(9) + 90 ¹
Basic Sciences	(6) + 15
Physics 205a,b; 255a,b	(3) + 5
Chemistry 200, 201, 210	(3) + 4
Geology 220, 390	6
Mathematics 150, 250, 251, 305, Mining Engineering 417	(3) + 14
Engineering	61
General: Engineering 102, 222, 361,	6
Engineering Topics	55
Engineering Science: 260a,b, 300, 311, 313, Mining Engineering 413	17
Mining Coursework: Civil Engineering 263 or Mining Engineering 320, 400, 410, 415, 420, 421, 425, 431, 440, 445 or 475, 455	34
Capstone Design Mining Engineering 460	4
Total	131

¹Courses required for the major will apply toward 9 hours of University Core Curriculum, making a total of 41 in that area.

²Engineering requirements for Core Curriculum Social Science and Core Curriculum Sciences are more restrictive than those of the University as a whole.

³Transfer students holding an associate degree in a baccalaureate-oriented program must have a sequence of courses in social science or humanities terminated by a junior level course. See departmental adviser for an approved course. Students transferring from other programs or institutions will be required to (a) complete a course sequence in humanities or social sciences which includes a junior level course or (b) meet the Core Curriculum requirements for engineering students.

⁴Engineering sciences have their roots in mathematics and basic sciences, but carry that knowledge toward creative design. Engineering design is the process of devising a system, component, or process using basic and engineering sciences, mathematics, and creative thinking along with economic, safety, and environmental considerations.

Mining Engineering Faculty

Chugh, Yoginder P., Professor and *Chair*, Ph.D., Pennsylvania State University, 1971.

Honaker, Ricky Q., Assistant Professor, Ph.D., Virginia Polytechnic Institute and State University, 1992.

Missavage, Roger, Instructor, M.S., Southern Illinois University at Carbondale, 1991.

Paul, Bradley C., Associate Professor, Ph.D., University of Utah-Salt Lake, 1989.

Sevim, Hasan, Professor, Ph.D., Columbia University, 1984.

Sinha, Atmesh K., Professor, Ph.D., University of Sheffield, 1963.

Technology (Department)

Two undergraduate degree programs are available in technology. One program leads to the Bachelor of Science degree with a major in engineering technology (see Engineering Technology) with specializations in one of two areas: electrical engineering technology or mechanical engineering technology. The other program leads to the Bachelor of Science degree with a major in industrial technology (see Industrial Technology) with specialization in one of two areas: manufacturing technology or mining technology.

Engineering technology courses contain topics related to the design and development of products. Industrial technology courses contain topics related to the manufacture and distribution of products.

The present technological society has increased the demand for new types of personnel known as technologists. A technologist utilizes established methods to

achieve improvements in existing designs and systems. Technologists should be knowledgeable in the state of the art of a particular technology, capable of utilizing handbooks and other forms of codified information with skill and discrimination, and sufficiently versed in mathematics and science to recognize sound procedures.

The industrial technology program is flexible enough to provide the means whereby a graduate of a two-year occupational program can obtain a bachelor's degree in a minimum length of time. The program also provides credit to individuals for related work experience outside the institution.

The programs are designed to provide the necessary training for entry into employment upon the completion of the baccalaureate degree. Opportunities for advanced study are available in manufacturing systems.

Technology Faculty

Abrate, Serge, Associate Professor, Ph.D., Purdue University, 1983.

Andrews, Paul E., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1980.

Barbay, Joseph E., Jr., Associate Professor, Ph.D., University of Missouri, Columbia, 1971.

Besterfield, Dale H., Professor, *Emeritus*, Ph.D., Southern Illinois University, 1971.

Butson, Gary J., Associate Professor and *Chair*, Ph.D., University of Illinois, 1981.

Chang, Feng-Chang (Roger), Assistant Professor, Ph.D., Ohio State University, 1985.

Chen, Han Lin, Associate Professor, *Emeritus*, M.S., Southern Illinois University, 1958.

Contor, Keith L., Associate Professor, *Emeritus*, M.S., State College of Washington at Pullman, 1960.

Cross, Bud D., Visiting Assistant Professor, *Emeritus*, M.S., Southern Illinois University, 1965.

Dunning, E. Leon, Professor, *Emeritus*, Ph.D., University of Houston, 1967.

Ferketich, Robert R., Associate Professor, Ph.D., Southern Illinois University, 1980.

Johnson, Marvin E., Professor, *Emeritus*, Ed.D., University of Missouri, Columbia, 1959.

King, Frank H., Visiting Assistant Professor, *Emeritus*, Ph.D., Southern Illinois University, 1981.

Lindsey, Jefferson F., III., Professor, D. Engr., Lamar University, 1976.

Marusarz, Ronald K., Assistant Professor, M.S., Southern Illinois University, 1978.

Meyers, Fred E., Associate Professor, *Emeritus*, M.B.A., Capitol University, 1975.

Orr, James P., Associate Professor, Ph.D., Southern Illinois University, 1983.

Ott, Carlyle G., Assistant Professor, *Emeritus*, M.S.Ed., Southern Illinois University, 1951.

Rogers, C. Lee, Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1975.

Rong, Yiming (Kevin), Associate Professor, Ph.D., University of Kentucky, 1989.

Spoerre, Julie K., Assistant Professor, Ph.D., Florida State University, 1995.

Szary, Marek, Assistant Professor, Ph.D., Wroclaw (Poland), 1977.

Velasco, Tomas, Assistant Professor, Ph.D., University of Arkansas, 1991.

Weston, Alan J., Assistant Professor, Ph.D., Southern Illinois University, 1991.



College of Liberal Arts

John S. Jackson, *Dean*

Departments: Administration of Justice; Anthropology; Art and Design; Economics; English; Foreign Languages and Literatures; Geography; History; Linguistics; Music; Philosophy; Political Science; Psychology; Sociology; Speech Communication; Theater

The College of Liberal Arts offers the following majors leading to the Bachelor of Arts, Bachelor of Fine Arts, Bachelor of Music and Bachelor of Science degrees. Minors are possible in most of these areas. For exceptions, see below.

Administration of Justice	Foreign Languages and	Geography
African Studies ¹	Literatures	History
Aging Studies ¹	Chinese ¹	Linguistics
Anthropology	Classical	Mathematics
Art	Civilization ¹	Museum Studies ¹
Asian Studies ¹	Classics	Music
Black American Studies ¹	East Asian	Paralegal Studies for
Comparative Literature ¹	Civilizations ¹	Legal Assistants
Design	French	Philosophy
Earth Science ¹	German	Political Science
Economics	Greek ¹	Psychology
English	Japanese ¹	Sociology
Foreign Language and	Latin ¹	Speech Communication
International Trade	Russian	Theater
	Spanish	University Studies

¹Minor only.

The College of Liberal Arts provides instruction in basic subject matter courses for the University Core Curriculum; majors in twenty-four subject areas; graduate programs for students pursuing master's and Ph.D. degrees; and preprofessional curricula for specialized schools such as law and courses offered through the Division of Continuing Education. The Bachelor of Arts, the Bachelor of Fine Arts, the Bachelor of Music, or the Bachelor of Science degree is granted to students who fulfill requirements for graduation from the College of Liberal Arts. The courses of study outlined by the departments determine the degree awarded. Students in the College of Liberal Arts may also prepare directly for teaching at the secondary level by including in their studies certain professional courses offered by the College of Education.

Through the diversified offerings of the College of Liberal Arts, students develop the ability to seek and weigh evidence and to think critically and independently; they gain a fundamental understanding of the ever changing social, political, and physical environment, and a deeper understanding of people, cultures, art, and literature.

ACADEMIC REQUIREMENTS

To receive a degree from the College of Liberal Arts students must fulfill the following:

1. University requirements including those relating to University Core Curriculum, residency, total hours completed, and grade point average.
2. College of Liberal Arts academic requirements:

- a. One year of college credit in a single foreign language. Foreign students who have met the Office of Admissions and Records English language proficiency requirement may satisfy this requirement with their native language by providing a secondary school certificate from their native country. (Bachelor of Fine Arts degree students in Art, Bachelor of Music degree students and Bachelor of Arts degree students in the Music Business Specialization do not have to fulfill the foreign language requirement.)
 - b. One English composition course, excluding creative writing, in addition to the Core Curriculum composition requirement. Students who have fulfilled the Writing-Across-the-Curriculum requirement may fulfill this requirement with a second departmental writing-intensive course.
 - c. One approved writing-intensive course designated by the major department as fulfilling the Writing-Across-the-Curriculum requirement.
 - d. One science course with lab in addition to the University Core Curriculum science requirement. Any University Core Curriculum science course or a course with science content from a College of Liberal Arts approved list will satisfy this requirement. (Bachelor of Fine Arts degree students in Art, Bachelor of Music degree students and Bachelor of Arts degree in the Music Business Specialization do not have to fulfill the science requirement.)
3. Completion of an approved major in the College of Liberal Arts.
 4. At least 40 hours of course work at the 300- or 400-level.

Liberal arts major requirements provide for a large number of elective courses, giving students maximum flexibility in planning their overall program of study at the University. To assist students in planning their programs, the college maintains an academic advisement office in Faner Hall 1229, as well as faculty advisers in each department. Students are urged to consult these academic advisers on how they can best use their electives to fulfill their intellectual interests and to prepare for particular career opportunities. A carefully planned minor or second major field can lead to additional career opportunities for the liberal arts major. Students who are planning to attend graduate school or one of the professional schools such as law or medicine should consult with their advisers on how best to plan their undergraduate curriculum.

University Studies Degree Program

In the University Studies Program students pursue either a Bachelor of Arts or Bachelor of Science degree through an individually designed, broad-based curriculum rather than a traditional specialization. The program accommodates multidisciplinary and non-traditional approaches to education and to related careers.

To determine eligibility for the University Studies Program as well as to explore specific possibilities, students should consult with the College of Liberal Arts Advisement office in Faner 1229 for further information.

Pre-Law

The College of Liberal Arts has a pre-law advisory committee to help students plan a useful, interesting curriculum to acquire the skills important for the study of law. This committee is made up of faculty members of various University units who hold law degrees or who have particular expertise in fields important to law and pre-law preparation. The committee sponsors a Pre-Law Night each fall, when opportunities are presented for open discussion of undergraduate curriculum and the law school admission process. These discussions are led by students and faculty of the Southern Illinois University at Carbondale School of Law. A mock Law School Admission Test is given twice a year under regular test conditions.

The pre-law student may choose any major course of study. Among courses especially recommended for pre-law students is Political Science 130, Law in American

Society, offered each fall semester. Students who are interested in pre-law may discuss academic programs and plans with pre-law advisers in the Liberal Arts Advisement Office.

Administration of Justice (Major, Courses)

The Bachelor of Arts degree with a major in administration of justice meets the objectives of students interested in law enforcement, the courts, corrections, juvenile justice, criminal behavior and other aspects of crime and criminal justice.

The curriculum is designed to provide students with a broad view of crime and criminal justice. Building on the fundamental knowledge developed in core courses and a restricted set of electives, students can select from a variety of other courses to gain in-depth, specialized knowledge about their particular areas of interest within the curriculum. Under faculty guidance, students may take supplemental courses -- computer science, accounting, management, and foreign language, for example -- to complement their special interests. This approach provides a sound foundation in administration of justice while allowing the flexibility necessary to accommodate individual interests and needs.

A field internship placement may be an important element in the program and is encouraged for interested students who meet departmental criteria.

The program requires that each administration of justice major complete a minor in some other field of study. This requirement can be satisfied by completing the minor offered by any other four-year program at SIUC.

Transfer into the administration of justice major from another SIUC program or from another institution of higher education must be approved by the director of the administration of justice program and requires a minimum grade point average of 2.25, based on at least 15 semester hours of college-level courses.

Bachelor of Arts Degree, College of Liberal Arts

ADMINISTRATION OF JUSTICE MAJOR

<i>University Core Curriculum Requirements</i>	41
<i>College of Liberal Arts Academic Requirements</i> (See above)	14
<i>Requirements for Major in Administration of Justice</i>	33
Core Requirements: 201, 290, 310, 316, 492	15
Administration of Justice Electives: 18 hours, at least 9 of which must be selected from 302, 306, 317, 320, 350, 384, 415, 473, 474; in addition at least 6 of the 18 hours must be selected from 400-level courses.	18
<i>Minor</i>	18
<i>Electives</i>	<u>14</u>
<i>Total</i>	120

Completion of Administration of Justice 201 and 290 (or consent of the instructor) is required for taking any 300- or 400-level administration of justice course. In addition, completion of Administration of Justice 316 (or consent of instructor) is required for taking any 400-level administration of justice course. Other prerequisites may be associated with individual courses; refer to the catalog description of the specific course.

No more than three hours of Administration of Justice 395 can be counted toward the major.

At least 15 of the credit hours applied toward completion of the requirements of a B.A. in administration of justice must have been earned in Administration of Justice courses offered at SIUC.

Administration of justice majors are encouraged to take the Core Curriculum course, Administration of Justice 203. However, Administration of Justice 203 can be counted toward the 33 hours in the administration of justice major only if the student fulfills the Core Curriculum Integrative Studies (Multicultural) requirement with some course other than Administration of Justice 203.

A student may substitute Psychology 323 or Social Work 383 for Administration of Justice 301; Political Science 340 for Administration of Justice 302; Psychology 211, Sociology 312, or Political Science 300 for Administration of Justice 316.

Administration of Justice Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
Select (Sci) ¹	3	3	SPCM 101 ¹	3	-
Select (Soc Sci) ¹	3	3	Select (Fine Arts) ¹	-	3
Select (Humanities) ¹	3	3	Select (Integrated Stdy) ¹	3	3
ENGL 101, 102	3	3	Select (Foreign Languages)	4	4
MATH 110, 113	3	-	Select (Human Hlth) ¹	2	-
AJ 201	-	3	AJ 290	3	-
			AJ 316	-	3
			AJ 300-Level ²	-	3
<i>Total</i>	15	15	<i>Total</i>	15	16
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
Science ³	3	-	AJ 492	3	-
AJ 310	3	-	AJ 400 level	-	3
AJ 300-400 level	3	6	AJ 300-400 levels	3	3
English	-	3	Minor courses	3	3
Minor courses	6	6	Electives	6	5
<i>Total</i>	15	15	<i>Total</i>	15	14

¹ See University Core Curriculum

² Students may substitute Psychology 323 or Sociology 383 for Administration of Justice 301; Political Science 340 for Administration of Justice 302; Psychology 211, Sociology 312 or Political Science 300 for Administration of Justice 316

³ CoLA requires one science with lab course beyond University Core Curriculum requirements

Minor

A minor in administration of justice consists of 18 hours of administration of justice courses, which must include 201 and 290. At least 12 of the 18 hours must consist of administration of justice courses taken at SIUC.

Administration of Justice Faculty

Anderson, Dennis B., Associate Professor, Ed.D., University of Nebraska, 1970.

Castellano, Thomas C., Associate Professor, Ph.D., State University of New York at Albany, 1986.

Coughlin, Joseph S., Professor, *Emeritus*, M.S.W., University of Wisconsin, 1954.

Cuadrado, Mary, Assistant Professor, Ph.D., City University of New York, 1995

Ferdinand, Theodore N., Professor, *Emeritus*, Ph.D., University of Michigan, 1961.

Garofalo, James, Professor and *Chair*, Ph.D., State University of New York at Albany, 1978.

Johnson, Elmer H., Distinguished Professor, *Emeritus*, Ph.D., University of Wisconsin, 1950.

LeBeau, James L., Associate Professor, Ph.D., Michigan State University, 1978.

Lorinskas, Robert A., Associate Professor, Ph.D., University of Georgia, 1973.

Matthews, Charles V., Associate Professor, *Emeritus*, M.S., University of Kansas City, 1951.

McDermott, M. Joan, Associate Professor, Ph.D., State University of New York at Albany, 1979.

Moberly, Michael D., Assistant Professor, M.P.A., Indiana University, 1981.

Riedel, Marc P., Associate Professor, Ph.D., University of Pennsylvania, 1972.

Robinson, Cyril D., Professor, *Emeritus*, LL.B., Northwestern University, 1952.

Small, Mark A., Associate Professor, J.D., Ph.D., University of Nebraska, 1990.

Szockyj, Elizabeth, Assistant Professor, Ph.D., University of California-Irvine, 1992.

African Studies (Minor)

An African Studies minor is available with the College of Liberal Arts. African studies is an interdisciplinary minor, involving courses in anthropology, Black American studies, geography, history, linguistics, political science, and religious studies. Each of these departments has one or more faculty who specialize in Africa and who are interested in assisting students wanting to study about Africa. The requirements for the African studies minor are listed below.

Minor

The African studies minor consists of 15 hours with 9 hours in required core courses and 6 hours of electives.

Required Core Courses: 9 hours selected from Anthropology 470a, Black American Studies 225, 314a,b, History 387a,b, Political Science 465.

Electives: 6 hours selected from any courses not used as part of the core or Geography 365, Linguistics 450-3 (only when African languages are studied), or 2-3 hours of reading courses on Africa sponsored by any of the departments listed above or below.

Related courses which do *not* count toward the minor are: Anthropology 410h, 470f, Black American Studies 311a,b, Economics 322, History 362a,b, or Political Science 452.

Aging Studies (Minor)

An Aging Studies minor is available in the College of Liberal Arts. The minor is designed for the student with career interests in the field of gerontology and for students who wish to add an understanding of aging to their knowledge. The curriculum provides an interdisciplinary approach to understanding the aging process, basic issues related to aging and the aged, and an opportunity to acquire greater knowledge of gerontological theory and research. A component of the minor is a practicum that will assist the student in developing skills for working with and on behalf of older persons. The minor is structured to complement a major or individual courses in disciplines such as psychology, sociology, social work, recreation, health education, and rehabilitation.

The minor in aging studies consists of a minimum of eighteen semester hours which includes nine hours of core courses consisting of Psychology 304, Sociology 465 and Rehabilitation 447; six hours of approved electives to be selected from Communication Disorders and Sciences 438, Health Education 402, Health Education 440, Recreation 440c, Rehabilitation 405, Rehabilitation 446, Social Work 463 and Social Work 466; and three hours of practicum. The practicum, which may be oriented either toward research or care giving, requires that the student work in an environment that involves direct contact with older people including, but not restricted to, senior centers and nursing homes. Time in the field should be approximately twelve hours per week for a semester. Terms of supervision will be consistent with practices in the student's major area of study if that area of study requires a practicum. Where the student's major area has no practicum program, the aging studies coordinator can assist the student in meeting this requirement.

The student should check with the coordinator of the aging studies minor or their academic adviser as early as possible in order to plan an orderly progression of study.

Anthropology (Department, Major, Courses)

Anthropology is the study of humans and their cultures in terms of universal features, variability, and development through time. The major subdivisions are socio-cultural anthropology, linguistics, archaeology, and physical anthropology. Anthropology is a special major providing capable students with an intensive program emphasizing early integration into upper division coursework. While oriented toward preparation for graduate work, this major is also appropriate for the outstanding liberal arts student seeking a distinctive program. Students must meet a minimum 2.5 gpa requirement for admission into the Anthropology major. The highly motivated student failing to meet this requirement is encouraged to petition the Undergraduate Studies Committee with a one-page statement justifying their admission. Grades below C in Anthropology courses will not be accepted as fulfilling major requirements.

The student is expected to gain a broad background in all subfields, after which the options of further general study or specialization are available. Students are encouraged to supplement their anthropological studies with work in other social sciences, and where appropriate in biology, earth sciences, humanities, mathematics, or other areas.

Most professional anthropologists find employment as teachers and researchers in colleges and universities. However, a major in anthropology provides the student with a unique liberal arts background bridging the humanities, social, earth, and biological sciences, which leads to many other professional opportunities outside of teaching and research.

An anthropology major is required to take Anthropology 300a, b, c, d, and one each of the 310 and 410 course series. Anthropology seniors are required to participate in the Senior Seminar (Anthropology 480), usually held in the Fall semester. No more than six hours of Anthropology 460 and no more than six hours of 200-level course work may be applied to the major. It should be noted that graduate departments often require foreign language and mathematical background beyond that required by the undergraduate program. Those students not interested in advanced study will be advised on an individual basis reflecting their own particular interests and aspirations.

Students with exceptional scholarly promise may be invited into the departmental honors program, which includes the writing of an honors thesis, usually in the Spring semester of the senior year, under the direction of a departmental faculty member.

Bachelor of Arts Degree, College of Liberal Arts

University Core Curriculum Requirements	41
College of Liberal Arts Academic Requirements	14
Requirements for Major in Anthropology	32
Anthropology 300a, 300b, 300c, 300d and 480 required, and an additional nine hours: three of 310 series, three of 410 series, and three more of 400- level course work in anthropology.	
Electives	33
Total	120

Anthropology Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
Select ¹ (Sci)	3	3	Select ¹ (Math)	-	3
Select ¹ (Soc Sci)	3	3	Select ¹ (Multicultural)	3	-
Select ¹ (Hum)	3	3	SPCM 101 ¹	3	-
ENGL 101, 102 ¹	3	3	Select ¹ (Interdisciplinary Stdy)	-	3
Select ¹ (Fine Art)	-	3	Foreign Language ²	4	4
Select ¹ (Hum Hlth)	2	-	ANTH 300a,d ^{3,4}	4	3
			ANTH 300b,c ⁴	3	3
<i>Total</i>	14	15	<i>Total</i>	17	16
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
ANTH 310, 410	3	3	ANTH 480	3	-
ANTH 4XX	3	-	Anthropology Elective	3	3
ANTH 3XX or 4XX	-	6	Elective 300 or 400 level	9	10
ENGL	3	-			
Elective	6	6			
<i>Total</i>	15	15	<i>Total</i>	15	13

¹ See University Core Curriculum
² Two semesters (generally 8 hours) of a foreign language are required for all liberal arts students. Students intending to pursue a graduate education should realize that a foreign language would probably be required for graduate school admission; for these students two years of foreign language is recommended.
³ Sociocultural anthropology is central to major requirements and should be taken as soon as possible. Any two of 300a, b and c may be taken the second year. All four must be taken as a requirement for the major.
⁴ Grade below C in anthropology courses will not be accepted as fulfilling major requirements.

Minor

A minor in anthropology consists of at least 15 hours including at least two of the four courses: 300a, 300b, 300c, 300d, and a minimum of three of the remaining nine hours of 310 series or 400-level courses.

A minor in anthropology for students interested in museum studies may be earned by taking a designated series of museum-oriented courses offered by the Departments of Anthropology, Geology, History, Political Science and the School of Art and Design. Required courses for the minor are drawn from the following: Anthropology 450; Art and Design 207, 447; Geology 445; History 497 and/or 498; and Political Science 446.

Anthropology Faculty

Adams, Jane , Associate Professor, Ph.D., University of Illinois, 1987.	Hofling, C. Andrew , Assistant Professor, Ph.D., Washington University, 1982.
Bender, M. Lionel , Professor, <i>Emeritus</i> , Ph.D., University of Texas at Austin, 1968.	Kelley, J. Charles , Professor, <i>Emeritus</i> , Ph.D., Harvard University, 1948.
Benefit, Brenda R. , Associate Professor, Ph.D., New York University, 1987.	Maring, Ester G. , Assistant Professor, <i>Emerita</i> , Ph.D., Indiana University, 1969.
Butler, Brian M. , Adjunct Associate Professor, Ph.D., Southern Illinois University, 1977.	Maring, Joel M. , Associate Professor, <i>Emeritus</i> , Ph.D., Indiana University, 1967.
Corruccini, Robert S. , Professor, Ph.D., University of California at Berkeley, 1975.	McCall, John C. , Assistant Professor, Ph.D., Indiana University, 1992.
Cronk, Christine E. , Adjunct Assistant Professor, D.Sc., Harvard University, 1980.	McCrossin, Monte L. , Researcher III, Ph.D., University of California at Berkeley, 1994.
Dark, Philip J. C. , Professor, <i>Emeritus</i> , Ph.D., Yale University, 1954.	Muller, Jon D. , Professor, Ph.D., Harvard University, 1967.
Ford, Susan M. , Associate Professor, Ph.D., University of Pittsburgh, 1980.	Newsom, Lee A. , Adjunct Assistant Professor, Ph.D., University of Florida, 1993.
Gumberman, George J. , Professor, <i>Emeritus</i> , Ph.D., University of Arizona, 1969.	Rands, Robert L. , Professor, <i>Emeritus</i> , Ph.D., Columbia University, 1952.
Handler, Jerome S. , Professor, <i>Emeritus</i> , Ph.D., Brandeis University, 1965.	Rice, Don S. , Professor, Ph.D., Pennsylvania State University, 1952.
Hill, Jonathan , Professor, Ph.D., Indiana University, 1983.	Rice, Prudence M. , Professor and <i>Chair</i> , Ph.D., Pennsylvania State University, 1976.

Riley, Carroll L., Distinguished Professor, *Emeritus*, Ph.D., University of New Mexico, 1952.

Shimada, Izumi, Associate Professor, Ph.D., University of Arizona, 1976.

Taylor, Walter W., Professor, *Emeritus*, Ph.D., Harvard University, 1943.

Art and Design (School, Majors [Art, Design], Courses)

The School of Art and Design offers two majors: art and design; and offers two degrees: the Bachelor of Arts and the Bachelor of Fine Arts. Ten specializations are offered in art: the B.A. degree offers art education, art history and general studio; and the B.F.A. degree offers drawing, painting, printmaking, sculpture, ceramics, metalsmithing and fibers/weaving. Two specializations are offered in design under the B.A. degree: visual communication and product design.

The education of teachers, scholars, artists and designers requires both comprehensive learning in the specialization and broad learning in studies outside the major. In meeting these objectives, the School honors the importance of the University Core Curriculum and emphasizes both theory and practice in its specializations. Studies are sequentially planned to facilitate orderly progression throughout the baccalaureate curriculum.

The specializations in art education and art history are offered within a liberal arts curriculum format. Upon completion of the program, students in art education are prepared and certified to teach in the public schools. In art history, graduates are prepared for advanced study or for careers that require scholarly and liberal arts training. General studio is the most flexible program offered. By means of both requirements and elective options, students may plan interdisciplinary programs in art and design or develop programs leading towards a specific career objective.

The B.F.A. specializations in art and B.A. specializations in design are professional programs. With a B.F.A. degree, students are prepared to practice as studio artists, go on to advanced study or enter careers in their studio specializations. The B.A. in design prepares students with the intellectual, technological and practical knowledge required in the professional world of design. With a specialization in visual communication, students are accustomed to the discipline practiced in the various fields of application for graphic design. With a specialization in product design, students are prepared to practice in the industrial field of contemporary product development.

Prior to entry into a selected specialization, all majors are required to complete foundation studies: beginning coursework in art history, drawing, and two- and three-dimensional design. In addition, for entrance into the art B.F.A. and the design B.A. specializations, students must have successfully completed a portfolio review of work from previous art studies (at SIUC or elsewhere). The review will be conducted no later than upon completion of the foundation studio courses.

Transfer students seeking admission from another program at Southern Illinois University at Carbondale must meet the same requirements as those seeking admission from another institution (See Chapter 2). Evaluation of a studio course for transfer credit from another institution will be made on the basis of a presentation of the work (or professional quality slides of the work) executed in the course to determine whether the course will be considered equivalent to a specific course or accepted as studio elective credit.

Most prerequisite courses must be completed with a grade of C or better before a student may advance into the next course. Students should refer to individual course descriptions for specific information.

ART MAJOR

Bachelor of Fine Arts Degree, College of Liberal Arts

A student majoring in art should select one of the following fields of interest by the end of the sophomore year: drawing, painting, printmaking, sculpture, ceramics, metalsmithing, or fibers/weaving.

ART MAJOR – DRAWING SPECIALIZATION

<i>University Core Curriculum Requirements</i>	41
Art and Design 207a should be taken as an approved substitution for the University Core Curriculum fine arts course.	
<i>Requirements for Specialization in Drawing</i>	(3) + 94
Foundation requirements: Art and Design 100a, 100b, 110, 120, (207a), 207b,	(3) + 15
Major Requirements: Art and Design 200, 201, 202, 203, 204 or 205 or 206, 300-9, 301a, 301b, 302a or 302b or 302c, 400a, 400b, 400c	48
Art and Design history electives: 300- or 400-level	9
Studio art electives	22
<i>Total</i>	135

ART MAJOR – PAINTING SPECIALIZATION

<i>University Core Curriculum Requirements</i>	41
Art and Design 207a should be taken as an approved substitution for the University Core Curriculum fine arts course.	
<i>Requirements for Specialization in Painting</i>	(3) + 94
Foundation Requirements: Art and Design 100a, 100b, 100, 120, (207a), 207b,	(3) + 15
Major requirements: Art and Design 200, 201, 202, 203, 204 or 205 or 206, 300-6, 301a, 301b, 301c, 302a or 302b or 302c, 401a, 401b, 401c	48
Art and Design history electives: 300- or 400-level	9
Studio art electives	22
<i>Total</i>	135

ART MAJOR – PRINTMAKING SPECIALIZATION

<i>University Core Curriculum Requirements</i>	41
Art and Design 207a should be taken as an approved substitution for the University Core Curriculum fine arts course.	
<i>Requirements for Specialization in Printmaking</i>	(3) + 94
Foundation requirements: Art and Design 100a, 100b, 110, 120, (207a), 207b	(3) + 15
Major requirements: Art and Design 200, 201, 202, 203, 204 or 205 or 206, 300-6, 301a, 302a, 302b, 302c, 402a, 402b, 402c	48
Art and Design history electives: 300- or 400-level	9
Studio art electives	22
<i>Total</i>	135

Drawing, Painting, Printmaking Suggested Curricular Guide

FIRST YEAR		FALL	SPRING	SECOND YEAR		FALL	SPRING
AD 100a,b	3		3	AD 20X, 30X ¹	3		3
AD 110,120	3		3	AD 207a,b	3		3
ENGL 101, 102	3		3	AD studio	3		3
Core Mathematics	3		-	Core Health	2		-
SPCM 101	-		3	Core Science	3		3
Core Humanities	-		3	Core Social Science	3		-
Core Social Science	3		-	Core Humanities	-		3
<i>Total</i>	15		15	Core Integrative Studies	-		3
				<i>Total</i>	17		18
THIRD YEAR		FALL	SPRING	FOURTH YEAR		FALL	SPRING
AD 30X ¹	3		6	AD 40Xa,b ¹	6		6
AD 40Xc ¹	-		3	AD Studio	8		8
AD Studio	9		9	AD Art History Elective	3		3
AD Art History Elective	3		-	<i>Total</i>	17		17
Core Integrative Studies	3		-				
<i>Total</i>	18		18				

¹ X=0 for drawing; 1 for painting; 2 for printmaking**ART MAJOR—SCULPTURE SPECIALIZATION**

<i>University Core Curriculum Requirements</i>	41
Art and Design 207a should be taken as an approved substitution for the University Core Curriculum fine arts course.	
<i>Requirements for Specialization in Sculpture</i>	(3) + 94
Foundation requirements: Art and Design 100a, 100b, 110, 120, (207a), 207b	(3) + 15
Major requirements: Art and Design 200, 201, 203, 204 or 205 or 206, 300-3, 303-9, 403a, 403b, 403c	39
Art and Design history electives: 300- or 400-level	9
Craft electives	6
Studio art electives	25
<i>Total</i>	135

Sculpture Suggested Curricular Guide

FIRST YEAR		FALL	SPRING	SECOND YEAR		FALL	SPRING
AD 100a,b	6		-	AD 303	3		3
AD 110	-		3	AD 207a,b	3		3
AD 203	-		3	AD studio	3		3
ENGL 101, 102	3		3	Core Health	2		-
Core Mathematics	3		-	Core Science	3		3
SPCM 101	-		3	Core Social Science	3		-
Core Humanities	-		3	Core Humanities	-		3
Core Social Science	3		-	Core Integrative Studies	-		3
<i>Total</i>	15		15	<i>Total</i>	17		18
THIRD YEAR		FALL	SPRING	FOURTH YEAR		FALL	SPRING
AD 303, 403a	3		6	AD 403b	6		6
AD 403c	-		3	AD Studio	8		8
AD Studio	9		9	AD Art History Elective	3		3
AD Art History Elective	3		-	<i>Total</i>	17		17
Core Integrative Studies	3		-				
<i>Total</i>	18		18				

ART MAJOR—CERAMICS SPECIALIZATION

<i>University Core Curriculum Requirements</i>	41
Art and Design 207a should be taken as an approved substitution for the University Core Curriculum fine arts course.	
<i>Requirements for Specialization for Ceramics</i>	(3) + 94

Foundation requirements: Art and Design 100a, 100b, 110, 120, (207a), 207b	(3) + 15
Major requirements: Art and Design 200 or 201 or 202, 203, 204, 6 credits from 205 or 206 or 214, 304a, 304b, 404a, 404b, 404c, 404d-6	39
Art and Design history electives	9
Craft or sculpture electives	9
Studio art electives	22
Total	135

ART MAJOR – METALSMITHING SPECIALIZATION

<i>University Core Curriculum Requirements</i>	41
Art and Design and 207a should be taken as an approved substitution for the University Core Curriculum fine arts course	
<i>Requirements for Specialization in Metalsmithing</i>	(3) + 94
Foundation requirements: Art and Design 100a, 100b 110, 120, (207a), 207b	(3) + 15
Major Requirements: Art and Design 203, 205, 6 hours from 204, 206, or 214, 223, 305a, 305b, 405a, 405b, 405c, 405d-6	39
Art and Design history electives: 300- or 400-level	9
Craft or sculpture electives	9
Studio art electives	22
Total	135

ART MAJOR – FIBERS/WEAVING SPECIALIZATION

<i>University Core Curriculum Requirements</i>	41
Art and Design 207a should be taken as an approved substitution for the University Core Curriculum fine arts course.	
<i>Requirements for Specialization in Fibers/Weaving</i>	(3) + 94
Foundation requirements: Art and Design 100a, 100b, 110, 120, (207a), 207b	(3) + 15
Major requirements: Art and Design 200, 202, 201 or 203, 204 or 205 or 214, 206, 242, 306a, 306b, 406a, 406b, 406c, 406d-6, Cinema and Photography 225	42
Art and Design history electives: 300- or 400-level	9
Craft electives	6
Studio art electives	19
Total	135

Ceramics, Metalsmithing, Fibers/Weaving Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
AD 100a,b	6	-	AD 120.....	3	-
AD 110	-	3	AD 207a,b.....	3	3
AD 20X.....	-	3	AD 300Xa,b.....	3	3
ENGL 101, 102	3	3	AD Studio	-	3
Core Mathematics.....	3	-	Core Health	2	-
SPCM 101	-	3	Core Science.....	3	3
Core Humanities.....	-	3	Core Social Science	3	-
Core Social Science	3	-	Core Humanities.....	-	3
			Core Integrative Studies	-	3
Total	15	15	Total	17	18
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
AD 40Xa,b	3	6	AD 40Xd	6	-
AD 40Xc	-	3	AD Studio	8	14
AD Studio	9	9	AD Art History Elective.....	3	3
AD Art History Elective	3	-			
Core Integrative Studies	3	-			
Total	18	18	Total	17	17

Bachelor of Arts Degree, College of Liberal Arts

A student majoring in art with a specialization in art history, art education, or general studio should select the specialization by the end of the sophomore year.

ART MAJOR – ART HISTORY SPECIALIZATION

University Core Curriculum Requirements	41
Art and Design 207a should be taken as an approved substitution for the University Core Curriculum fine arts course.	
Requirements for Specialization in Art History	(3) + 79
Foundation requirements: Art and Design 100a, 100b, 110, (207a), 207b	(3) + 12
Major requirements: Art and Design 327, 347, 357, 407, 417, 427, 437, 478, 489-6	30
Art History electives: twelve hours from Art and Design 447, 448, 457, 458, 467, 468, 477, 487a,b or 497	12
Foreign Language (French or German recommended)	8
Liberal Arts electives	17
To be chosen from philosophy, history, anthropology, classical studies, foreign languages, religious studies, or other courses approved by the School of Art and Design	
Total	120

Art History Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
AD 100a,b or 110.....	3	3	AD 100a,b or 110.....	3	-
ENGL 101, 102.....	3	3	AD 207a,b.....	3	3
Core Mathematics.....	3	-	Foreign Language	4	4
SPCM 101.....	-	3	Core Humanities.....	3	-
Core Health	2	-	Core Science.....	3	-
Core Humanities.....	3	-	Core Social Science	-	3
Core Science.....	-	3	Core Integrative Studies.....	-	6
Core Social Science	-	3			
Total	14	15	Total	16	16
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
AD 327.....	3	-	AD 417.....	3	-
AD 347.....	-	3	AD 427.....	3	-
AD 478.....	3	-	AD 437.....	-	3
Liberal Arts Electives	6	6	AD 489b.....	3	3
AD 347.....	-	3	Art History Elective	3	6
AD 407.....	-	3	Liberal Arts Elective	2	3
Art History Elective.....	3	-			
Total	15	15	Total	14	15

ART MAJOR – GENERAL STUDIO SPECIALIZATION

University Core Curriculum Requirements	41
Art and Design 207a should be taken as an approved substitution for the University Core Curriculum fine arts course.	
Requirements for Specialization in General Studio	(3) + 79
Foundation requirements: Art and Design 100a, 100b, 110, 120, (207a), 207b	(3) + 15
Major requirements: Seven courses from Art and Design 200, 201, 202, 203, 204, 205, 206, 213, 214 or 222	21
300-level studio courses in at least three disciplines	15
400-level studio courses in two disciplines	6
Art and Design history electives	6
Liberal Arts electives (300- and 400-level)	8

Foreign Language	8	_____
Total	120	_____

General Studio Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
AD 100 a,b	3	3	AD Studio	6	6
AD 110, 120	3	3	AD 207a,b.....	3	3
ENGL 101, 102	3	3	Core Health	2	-
Core Mathematics.....	3	-	Core Humanities.....	-	3
Core Humanities.....	3	-	Foreign Language	4	4
SPCM 101.....	-	3			
Core Science	-	3			
Total	15	15	Total	15	16
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
AD Studio	6	6	AD Studio	9	9
AD Art History Elective	3	3	Core Integrative Studies	3	-
Core Science	3	-	Liberal Arts Elective	3	5
Core Social Science	3	3			
Core Integrative Studies	-	3			
Total	15	15	Total	15	14

Bachelor of Arts Degree, College of Liberal Arts or
Bachelor of Science Degree, College of Education

ART MAJOR – ART EDUCATION SPECIALIZATION

University Core Curriculum Requirements	41
To include SPCM 101; ENGL 101, 102; MATH 110 OR 113; PHYS 101, GEOL 110 or CHEM 106; PLB 115, 117, or ZOOL 115; PLB 301i 303i, or ZOOL 312i; POLS 114; AD 207a; HIST 110; ENGL 121 or 204; AD 227, ANTH 202, ENGL 205, HIST 202, 210, LING 201, PHIL 211 or SOC 215; HED 101 or PE 101.	
Requirements for Specialization in Art Education	(3) + 55
Foundation requirements: Art and Design 100a, 100b, 110, 120, (207a), 207b	(3) + 15
Studio requirements: Art and Design 201, 203, 204, 205, 202 or 206	15
Art education requirements: Art and Design 308, 318, 328a, 338a, 328b or 338b	10
Art and Design history electives (Art and Design 458 recommended) ...	6
Studio Art and Design electives	6
Psychology 102	3
Professional Education Requirements	28
See Teacher Education Program, College of Education.	
Total	124

Art Education Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
AD 100a,b	3	3	AD 200-Level Studio	6	6
AD 110, 120	3	3	AD 207a,b.....	3	3
ENGL 101, 102	3	3	HED 101 or PE 101.....	2	-
Core Mathematics.....	3	-	ENGL 121 or 204	-	3
PSYC 102.....	3	-	Core Humanities.....	3	-
SPCM 101.....	-	3	HIST 110.....	-	3
Core Science	-	3	Core Science.....	3	-
Total	15	15	POLS 114.....	-	3
			Total	17	18

THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
AD 200-Level Studio	3	-	AD Studio Elective.....	3	-
AD Studio Elective	-	3	AD 328a.....	2	-
AD 308, 318.....	3	2	Art History Elective	3	-
AD 338a,b	-	3	EDUC 316.....	2	-
AD 458.....	3	-	EDUC 317.....	2	-
Core Multicultural	3	-	EDUC 308.....	3	-
EDUC 311, 310	2	2	EDUC 401.....	-	12
EDUC 314, 315	2	3			
PLB 301i, 303i or ZOOL 312i	-	3			
<i>Total</i>	16	16	<i>Total</i>	15	12

Minor

A total of 21 hours is required for the minor. The student must complete Art and Design 100a, 100b, 207a and 207b for 12 hours and may then elect studio or art history courses for the remaining nine hours.

DESIGN MAJOR

Bachelor of Arts Degree, College of Liberal Arts

A student majoring in design should select one of the following specializations by the end of the sophomore year.

DESIGN MAJOR—PRODUCT DESIGN SPECIALIZATION

<i>University Core Curriculum Requirements</i>	41
Art and Design 207a should be taken as an approved substitution for the University Core Curriculum fine arts course.	
<i>Requirements for Specialization in Product Design</i>	(3) + 79
Foundation requirements: Art and Design 100a, 100b, 110, 120, (207a), 207b	(3) + 15
Major requirements: Two courses from Art and Design 203, 204, 205 or 206; 213, 223, 253, 263, 313, 323, 333, 337, 363, 383, 413, 423, 443, 489	48
Art and Design history electives	6
Approved electives	10
<i>Total</i>	120

Product Design Suggested Curriculum Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
AD 100a or b.....	3	3	AD 207a,b.....	3	3
AD 110, 120.....	3	3	AD 213a,b.....	3	-
ENGL 101, 102.....	3	3	AD 223	-	3
Core Mathematics.....	3	-	AD 253	3	-
Core Humanities.....	3	-	AD 263	-	3
SPCM 101	-	3	AD Craft/Sculpture.....	3	-
Core Social Science	-	3	Core Health.....	2	-
			Core Science.....	-	3
			Core Social Science	3	-
			Core Humanities.....	-	3
<i>Total</i>	15	15	<i>Total</i>	17	15

THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
AD 313	3	-	AD 337.....	3	-
AD 323	3	-	AD 413.....	3	-
AD 333	3	-	AD 423.....	3	-
AD 363	-	3	AD 443.....	-	3
AD 383	-	3	AD 489a.....	-	3
AD Craft/Sculpture	3	-	Art History Elective	-	3
AD Art History Elective	-	3	Core Integrative Studies	3	-
Core Science	3	-	Elective	3	4
Core Integrative Studies	-	3			
Elective	-	3			
Total	15	15	Total	15	13

DESIGN MAJOR – VISUAL COMMUNICATION SPECIALIZATION

University Core Curriculum Requirements	41
Art and Design 207a should be taken as an approved substitution for the University Core Curriculum fine arts course.	
Requirements for Specialization in Visual Communication	(3) + 79
Foundation requirements: Art and Design 100a, 100b, 110, 122, (207a), 207b	
	(3) + 15
Major requirements: Art and Design 122, 222, 232, 249, 302a or 302b or 302c, 322, 339, 342, 372, 422, 429, 452, 472, Cinema and Photography 225	
	42
Art and Design history electives	6
Approved electives	16
Total	120

Visual Communication Suggested Curriculum Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
AD 100a or b.....	3	3	AD 122.....	3	-
AD 110, 120	3	3	AD 207a,b.....	3	3
ENGL 101, 102	3	3	AD 222, 232.....	3	3
Core Mathematics.....	3	-	AD 249.....	-	3
Core Health	2	-	Core Science.....	3	3
SPCM 101.....	-	3	Core Social Science	3	-
Core Social Science	-	3	Core Humanities.....	-	3
Total	14	15	Total	15	15
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
AD 242 or CP 225.....	3	3	AD 302a, b or c.....	3	-
AD 322	3	-	AD 422.....	3	-
AD 339	3	-	AD 452.....	3	-
AD 372	-	3	AD 429.....	-	3
Art History Elective.....	-	3	AD 472.....	-	3
Core Humanities.....	3	-	Art History Elective.....	3	-
Core Integrative Studies	3	3	Elective	3	9
Elective.....	-	4			
Total	15	16	Total	15	15

Art and Design Faculty

Abrahamson, Roy E. , Associate Professor, <i>Emeritus</i> , Ed.D., Columbia University, 1965.	Busch, W. Larry , Associate Professor, M.S., Southern Illinois University, 1970.
Addington, Aldon M. , Associate Professor, M.F.A., Cranbrook Academy of Art, 1966.	Chapman, Gretel , Associate Professor, Ph.D., University of Chicago, 1964.
Archer, Richard E. , Assistant Professor, M.S., Governors State University, 1979.	Deller, Harris , Professor, M.F.A., Cranbrook Academy of Art, 1973.
Bernstein, Lawrence A. , Associate Professor, <i>Emeritus</i> , M.F.A., Cranbrook Academy of Art, 1953.	Feldman, Joel B. , Professor, M.F.A., Indiana University, 1967.
Boysen, Bill H. , Professor, M.F.A, University of Wisconsin, 1966.	Fink, Herbert L. , Distinguished Professor, <i>Emeritus</i> , M.F.A., Yale University, 1958.
Briggs, Larry S. , Associate Professor, B.F.A., University of Oklahoma, 1956.	Greenfield, Sylvia R. , Professor, <i>Emerita</i> , M.F.A., University of Colorado, 1967.

Jackson, Jed, Associate Professor, M.F.A., Cornell University, 1980.

Kington, L. Brent, Professor, *Emeritus*, M.F.A., Cranbrook Academy of Art, 1961.

Lawson, Elnora, Instructor, *Emerita*, B.Ed., Southern Illinois University, 1936.

Lintault, M. Joan, Professor, M.F.A., Southern Illinois University, 1962.

Mavigliano, George J., Associate Professor, M.A., Northern Illinois University, 1967.

Mawdsley, Richard, Professor, M.F.A., University of Kansas, 1969.

Montieth, Jerry Carlis, Associate Professor, M.F.A., Cranbrook Academy of Art, 1978.

Onken, Michael O., Associate Professor, M.A., Northern Illinois University, 1966.

Palmer, Erin, Assistant Professor, M.F.A., Yale University, 1993.

Paulson, Robert L., Professor and *Director*, M.F.A., University of Wisconsin, 1967.

Saunders, Ann, Associate Professor, M.F.A., Syracuse University, 1984.

Shay, Edward Holden, Professor, M.F.A., University of Illinois, 1971.

Sullivan, James E., Associate Professor, M.A., University of California at Los Angeles, 1965.

Sullivan, Milton F., Professor, *Emeritus*, M.A., Columbia University, 1951.

Unger, Götz, Associate Professor, Master of Design, Royal College of Art, 1978.

Walsh, Thomas J., Professor, M.F.A., University of Michigan, 1962.

Youngblood, Michael S., Associate Professor, *Emeritus*, Ph.D., University of Oregon, 1975.

Zivkovich, Kay M., Assistant Professor, M.F.A., Southern Illinois University at Carbondale, 1973.

Asian Studies (Minor)

Asian Studies is a minor offered in the College of Liberal Arts. The Asian studies program includes a variety of courses of the languages, civilizations, and contemporary issues of Asia. The program is intended to prepare a student for a number of career options with Asia interests. Through this program, a student may prepare for more advanced work on another campus, may develop a teaching specialty, or may broaden skills and knowledge which would be useful for professional and occupational interests in Asia.

A minor in Asian studies requires a minimum of 20 hours selected from a list of approved courses. Not more than eight hours may be taken in any one department for credit toward the 20 hours.

Black American Studies (Minor, Courses)

The Black American Studies program is a part of the College of Liberal Arts and follows the academic requirements of the College of Liberal Arts as listed above.

A minor in Black American Studies consists of a minimum of 20 hours which are to be selected from Black American Studies course offerings and organized according to each individual student's field of interest. An official minor is subject to approval by the coordinator of Black American Studies.

Black American Studies Faculty

Guthrie, Robert V., Professor and *Director*, Ph.D., U.S. International University, 1970.

Dawson, Nancy J., Assistant Professor, D.A., University of Albany, State University of New York, 1995.

Comparative Literature (Minor)

A comparative literature minor is available within the College of Liberal Arts. The program is directed by the comparative literature adviser in either the Department of English or the Department of Foreign Languages and Literatures. The minor consists of 18 hours of coursework at or above the 300-level in literature other than those in which the student is majoring.

Design

(SEE ART AND DESIGN)

Economics (Department, Major, Courses)

The study of economics provides a useful means of analyzing the behavior of consumers, businesses, and government so that the student can better understand many of the problems facing contemporary society. Majoring in economics gives the student an analytical ability and flexibility that is attractive to a wide range of employers in both business and government. Economics is also an excellent major for students who are considering graduate school in law, business, or any of the social sciences.

The economics major in the College of Liberal Arts provides a flexible program with 30 to 37 hours of electives. This flexibility allows the student to follow a program oriented toward a wide range of careers in government and business or to prepare for graduate study in any of several areas.

Economic courses at the 300 level generally require only a limited background in introductory economics, while many economics courses at the 400 level require Economics 340 (440) and 341 (441) as prerequisites. Students considering graduate study in economics should also plan to take Economics 340 and 341 as early in their college careers as possible and should choose several courses at the 400 level to complete their major requirements. A student considering graduate study in economics should plan to take Mathematics 250 and Economics 465.

For transfer students, equivalent economics courses will be accepted from other institutions. However, to complete a major in economics, a student must earn credit in no fewer than five economics courses taken at Southern Illinois University at Carbondale. To complete a minor in economics, a student must earn credit in no fewer than three economics courses taken at Southern Illinois University at Carbondale.

Students are urged to discuss their major programs with the director of undergraduate studies or with any other professor in the Department of Economics; the department also has a director of career information and placement available for consultation.

Courses where a Pass/Fail grade is earned will not be counted as fulfilling the requirements for a major in economics without the written consent of the director of undergraduate studies.

Bachelor of Arts Degree, College of Liberal Arts

University Core Curriculum Requirements	41
College of Liberal Arts Academic Requirements (See above.)	14
Requirements for Major in Economics	(3) + 34-35
One course from the following: Mathematics 140 or 150. The student will automatically satisfy the University Core Curriculum requirement with either of these courses. Three hours are already included in total hours shown for University Core Curriculum requirements	(3) + 1-2
Economics 240, 241, 308, 340, 341, 408	18 ¹
Any five ascending order economics courses except 301	15
Electives	30-37
Total	120

¹ Writing Intensive Requirement
Every economics major, in consultation with an undergraduate economics adviser, must choose an economics course from an approved list and designate that course as a writing intensive course; subject to the approval of the instructor. Once such a course has been determined, the student and the adviser and the instructor will sign an agreement that specifies: student name, student ID, course name, course number, amount, type and frequency of written assignments expected, instructor, semester and year. This agreement must be signed before or during the first week that the designated course meets. Copies of the agreement will be given to the student, the adviser and the instructor.

Honors Program

Students who are economics majors and working toward a Bachelor of Arts degree in the College of Liberal Arts may choose to enter the Honors Program if they have a minimum cumulative grade point average of 3.0 in all prior courses in economics.

As part of the ten economics courses required for a major, students in the honors program will be required to take 443 and any two other 400-level economics courses, except 408, 440, 441, and 479.

In order to be granted departmental honors, a student must have attained at graduation a minimum cumulative grade point average of 3.0 in economics courses taken.

Minor

For students majoring in other departments, a minor in economics is useful for employment in business or government and for graduate work in any of the social sciences, law, or business. The minor requires 15 hours of work in economics including Economics 240 and 241, but excluding Economics 301. A minimum grade point average of 2.0 must be achieved in the 15 hours of economics courses counted toward the minor. Students are urged to discuss their minor program with an economics adviser in order to assist students in designing coherent programs to meet their individual needs.

Economics Faculty

Chau, Ho Yan, Assistant Professor, Ph.D., The John Hopkins University, 1995.

Cribari-Neto, Francisco, Assistant Professor, Ph.D., University of Illinois, 1994.

Dibooglu, Selahattin, Assistant Professor, Ph.D., Iowa State University, 1993.

Edelman, Milton T., Professor, *Emeritus*, Ph.D., University of Illinois, 1951.

Ellis, Robert J., Jr., Associate Professor, *Emeritus*, Ph.D., University of Virginia, 1966.

Fare, Rolf, Professor, Docent., University of Lund, 1976.

Foran, Terry G., Associate Professor, Ph.D., Pennsylvania State University, 1971.

Grabowski, Richard, Professor, Ph.D., University of Utah, 1977.

Grosskopf, Shawna, Professor, Ph.D., Syracuse University, 1977.

Jensen, Mark, Assistant Professor, Ph.D., Washington University, 1994.

Laumas, G. S., Professor, Ph.D., Wayne State University, 1966.

Layer, Robert G., Professor, *Emeritus*, Ph.D., Harvard University, 1952.

Mitchell, Thomas, Associate Professor, Ph.D., Brown University, 1983.

Myers, John G., Professor, *Emeritus*, Ph.D., Columbia University, 1961.

Primont, Daniel A., Professor and *Chair*, Ph.D., University of California at Santa Barbara, 1970.

Sharma, Subhash, Professor, Ph.D., University of Kentucky, 1983.

Trescott, Paul B., Professor, *Emeritus*, Ph.D., Princeton University, 1954.

English (Department, Major, Courses)

The major in English is 36 semester hours at least half of which must be taken at Southern Illinois University at Carbondale. The English major may choose from four specializations.

Students who wish to declare English as a major should consult the director of undergraduate programs in English early in their college careers. Continuing students who wish to declare an English major should petition the Department of English for admission to the department. Transfer students should bring their transcripts and evaluation of transfer credit. Thereafter, all English majors must have their advance registration forms signed by an adviser in the Department of English. Only English courses that are completed with at least a C will fulfill a major requirement. Deviations from regular programs must have prior written department approval.

Students who wish to construct an inter-departmental major in English and certain related fields may do so in consultation and with the approval of the director of undergraduate programs in English.

All students are strongly urged to supplement their English majors through the study of classical and modern languages, as well as the study of foreign literature in translation. Majors preparing for graduate school should take two years of a foreign language.

Although a minor field is not required, students are urged to consider complementary minor fields such as foreign languages and literatures, history, philosophy, and journalism.

ENGLISH CORE CURRICULUM

All students majoring in English will take the following courses:

English 301, 302a, 302b, 309a, 309b, and 365, 471 or 472.

Bachelor of Science Degree, College of Education or Bachelor of Arts Degree, College of Liberal Arts

Students who wish to become certified teachers of English may pursue their majors as follows:

<i>University Core Curriculum Requirements</i>	41
To include ENGL 101 and 102; SPCM 101; MATH 110 or 113 or approved substitute; CHEM 106, GEOL 110 or PHYS 101; PLB 115, 117 or ZOOL 115; PLB 301i, 303i or ZOOL 312i; ENGL 121; HIST 101A ¹ ; AD 101, MUS 103, HIST 201 or THEA 101; HIST 110; FL 230 ² ; POLS 114; PSYC 102; ANTH 202, ENGL 205, HIST 202, 210 or SOC 215; HED 101 or PE 101.	
<i>Requirements for Major in English</i>	36
In addition to the core curriculum, teacher training candidates will take the following courses: English 300, 481, 485, a 400-level course in English literature before 1800, a 400-level course in continental literature, and one elective chosen from 300 and 400-level English courses.	
<i>Education Requirements</i>	31
Professional Education Requirements	28
See Teacher Education Program.	
Additional Course required for Teacher Certification	3
Psychology 102	
<i>Electives</i>	12
Students in the College of Liberal Arts must complete the college requirements as a part of the 12 hours. (See above.)	
<i>Total</i>	120

¹Required to meet non-western civilization/third world culture requirement.
²Must earn a grade of C or better.

Bachelor of Arts Degree, College of Liberal Arts

A student may wish to pursue one of several specializations in the College of Liberal Arts. The degree earned and the requirements for the degree are as follows:

<i>University Core Curriculum Requirements</i>	41
<i>Academic College Requirements</i>	8
Refer to Chapter Three under College of Liberal Arts	
<i>Requirements for Major in English</i>	39
To include Foreign Languages and Literatures 230, with a grade of C or better	
<i>Electives</i>	32
<i>Total</i>	120

ENGLISH MAJOR – GENERAL/GRADUATE SCHOOL SPECIALIZATION

In addition to the core curriculum, students will take six electives from the 300 and 400-level courses in English, with several courses at the 400-level. At least one of these elective courses must be a course in English literature before 1800, and one a course in continental literature. Students planning to enter graduate school are strongly urged to take two years of a foreign language or the equivalent. Students should consult with their departmental adviser to achieve a suitable range and breadth of course work.

ENGLISH MAJOR – CREATIVE WRITING SPECIALIZATION

In addition to the core curriculum, students should take two courses selected from English 281, 282, 284; English 381 and 382; English 351 or 352; and English 492.

ENGLISH MAJOR – PREPROFESSIONAL SPECIALIZATION

In addition to the core curriculum, majors interested in such fields as law and government will take the following courses:

English 290, 300, 301, 391, 445; one elective, which may concentrate on a special interest, and which, with the consent of the departmental adviser, may include a course in another department.

Minor

The minor in English is a minimum of 18 semester hours at least half of which must be taken at Southern Illinois University at Carbondale. Only English courses which are completed with at least a C fulfill a minor requirement.

Minors are available with several specializations, and the following are listed as examples only. Students interested in English as a minor are invited to confer with the director of undergraduate programs in English, or an adviser in the Department of English.

ENGLISH MINOR – TEACHING SPECIALIZATION (18 HOURS)

For students who wish to meet the minimum certification requirements for teaching English in the secondary schools, the following courses are required: English 300; 301; 471, 472 or 365; 485; and two of the following: English 302a, 302b, 309a, 309b or 445.

ENGLISH MINOR – PREPROFESSIONAL SPECIALIZATION (18 HOURS)

English 300; 290; 301; 391; 445; and 365, 471 or 472.

ENGLISH MINOR – CREATIVE WRITING SPECIALIZATION (18 HOURS)

Creative writing minors should take at least one course from English 281, 282 or 284; English 381 or 382; English 351 or 352; English 492; and two 300- or 400-level English courses.

ENGLISH MINOR – WORLD LITERATURE SPECIALIZATION (18 HOURS)

English 209, 301; and four courses from 425, 438, 445, 455, 465. For further information, see catalog section titled Comparative Literature.

English Faculty

Appleby, Bruce C., Professor, *Emeritus*, Ph.D., University of Iowa, 1967.

Bennett, Paula, Associate Professor, Ph.D., Columbia University, 1970.

Blakesley, David, Associate Professor, Ph.D., University of Southern California, 1989.

Brand, Clinton, Assistant Professor, Ph.D., Vanderbilt University, 1994.

- Brown, William J.**, Associate Professor, *Emeritus*, Ph.D., Duke University, 1966.
- Brunner, Edward J.**, Professor, Ph.D., University of Iowa, 1974.
- Cogie, Jane**, Assistant Professor, Ph.D., University of Iowa, 1984.
- Collins, K. K.**, Associate Professor, Ph.D., Vanderbilt University, 1976.
- Cruz, Ricardo Cortez**, Assistant Professor, M.S., Illinois State University, 1991.
- Dively, Ronda**, Assistant Professor, D.A., Illinois State University, 1994.
- Dodd, Diana L.**, Assistant Professor, *Emerita*, M.A., Southern Illinois University, 1954.
- Donow, Herbert S.**, Professor, *Emeritus*, Ph.D., University of Iowa, 1966.
- Fanning, Charles**, Professor, Ph.D., University of Pennsylvania, 1972.
- Fox, Robert Elliot**, Associate Professor, Ph.D., SUNY at Buffalo, 1976.
- Friend, Jewell A.**, Associate Professor, *Emerita*, Ph.D., Southern Illinois University, 1970.
- Geyh, Paula E.**, Assistant Professor, Ph.D., University of Pennsylvania, 1994.
- Goodin, George V.**, Associate Professor, *Emeritus*, Ph.D., University of Illinois, 1962.
- Griffin, Robert P.**, Associate Professor, *Emeritus*, Ph.D., University of Connecticut, 1965.
- Haruf, Kent A.**, Associate Professor, M.F.A., University of Iowa, 1973.
- Hatton, Thomas J.**, Associate Professor, *Emeritus*, Ph.D., University of Nebraska, 1966.
- Hawes, Clement C.**, Associate Professor, Ph.D., Yale University, 1986.
- Hillegas, Mark**, Professor, *Emeritus*, Ph.D., Columbia University, 1957.
- Hilliard, Lewis J.**, Assistant Professor, *Emeritus*, M.S. in Ed., Southern Illinois University, 1952.
- Howell, John M.**, Professor and Chair, Ph.D., Tulane University, 1963.
- Humphries, Michael L.**, Assistant Professor, Ph.D., The Claremont Graduate School, 1990.
- Hurley, Paul J.**, Professor, *Emeritus*, Ph.D., Duke University, 1962.
- Jones, Rodney G.**, Professor, M.F.A., University of North Carolina at Greensboro, 1973.
- Joseph, Allison**, Assistant Professor, M.F.A., Indiana University, 1992.
- Klaver, Elizabeth T.**, Assistant Professor, Ph.D., University of California at Riverside, 1990.
- Knopp, Lisa**, Assistant Professor, Ph.D., University of Nebraska-Lincoln, 1993.
- Kvernes, David M.**, Assistant Professor, *Emeritus*, Ph.D., University of Minnesota, 1967.
- Lamb, Mary E.**, Professor, Ph.D., Columbia University, 1976.
- Lang, Susan M.**, Assistant Professor, Ph.D., Emory University, 1992.
- Lawson, Richard A.**, Professor, *Emeritus*, Ph.D., Tulane University, 1966.
- Light, James F.**, Professor, *Emeritus*, Ph.D., Syracuse University, 1953.
- Little, Judy Ruth**, Professor, Ph.D., University of Nebraska, 1969.
- Lordan, E. Beth**, Associate Professor, M.F.A., Cornell University, 1987.
- Martin, Joan Foley**, Assistant Professor, *Emerita*, M.A., Southern Illinois University, 1959.
- McClure, Lisa**, Associate Professor, D.A., University of Michigan, 1988.
- McEathron, Scott**, Assistant Professor, Ph.D., Duke University, 1993.
- McNichols, Edward L.**, Assistant Professor, *Emeritus*, M.A., University of Detroit, 1958.
- Mitchell, Betty Lou**, Associate Professor, M.A., Southern Illinois University, 1951.
- Morey, A. J.**, Professor, Ph.D., University of Southern California, 1979.
- Moss, Sidney P.**, Professor, *Emeritus*, Ph.D., University of Illinois, 1954.
- Nelms, Ralph Gerald**, Associate Professor, Ph.D., Ohio State University, 1990.
- Partlow, Robert B., Jr.**, Professor, *Emeritus*, Ph.D., Harvard University, 1955.
- Perillo, Lucia Maria**, Associate Professor, M.A., Syracuse University, 1986.
- Person, Leland S., Jr.**, Professor, Ph.D., Indiana University, 1977.
- Peterson, Richard F.**, Professor, Ph.D., Kent State University, 1969.
- Piper, Henry Dan**, Professor, *Emeritus*, Ph.D., University of Pennsylvania, 1950.
- Rainbow, R. S.**, Associate Professor, *Emeritus*, Ph.D., University of Chicago, 1950.
- Riedinger, Anita R.**, Associate Professor, Ph.D., New York University, 1985.
- Rudnick, Hans H.**, Professor, Ph.D., University of Freiburg, Germany, 1966.
- Schonhorn, Manuel S.**, Professor, *Emeritus*, Ph.D., University of Pennsylvania, 1963.
- Simeone, William E.**, Professor, *Emeritus*, Ph.D., University of Pennsylvania, 1950.
- Simon, Mary C.**, Instructor, *Emerita*, A.M., University of Illinois, 1940.
- Stibitz, E. Earle**, Professor, *Emeritus*, Ph.D., University of Michigan, 1951.
- Vieth, David Muench**, Professor, *Emeritus*, Ph.D., Yale University, 1953.
- Webb, Howard W., Jr.**, Professor, *Emeritus*, Ph.D., University of Iowa, 1953.
- Weshinskey, Roy K.**, Assistant Professor, *Emeritus*, M.A., Southern Illinois University, 1950.
- Williams, Tony**, Associate Professor, Ph.D., University of Manchester, 1974.
- Zimra, Clarisse**, Associate Professor, Ph.D., University of Washington, 1974.

Foreign Language and International Trade (Major)

The foreign language and international trade major, leading to the Bachelor of Arts degree in the College of Liberal Arts, combines education in the liberal arts with preparation for careers in the international business community. It is designed to combine skill in a foreign language with a fundamental understanding of international commerce. This is accomplished by a curriculum of studies which has two cores—one in language and one in international trade and related subject matters. This cross-disciplinary program allows for choice of language as well as some options in electives so that different interests may be accommodated and individual goals may be realized.

At or near the end of the program of studies, application and expansion of the knowledge and skills gained by the student through course work is provided by an internship. Prerequisite to the internship: senior standing and satisfactory completion of both oral and written language competency examinations before the internship begins.

No grade lower than C will be accepted for any course required by the major (including Mathematics 139 and Psychology 102) taken at any institution at any time. A minimum grade of B is required in the appropriate SIUC 320b (320 for Russian and Spanish) language skills course. All students entering or reentering (after at least one fall or spring semester not enrolled as a Foreign Language and International Trade major or not enrolled at Southern Illinois University at Carbondale) the foreign language and international trade program begin in the pre-foreign language and international trade classification (PFLT). Admission to the major may be requested only after overall grade point average is at least 2.75. After admission, a minimum overall gpa of 2.75 must be maintained. Students falling below that level will be remanded to PFLT. When the grade point average is back to 2.75, students may request reinstatement to the major.

Bachelor of Arts Degree, College of Liberal Arts

<i>University Core Curriculum Requirements</i>	(3) + 38
Including Economics 302i; English 101 and 102; Mathematics 139; Psychology 102, Foreign Language 201a or above substitutes for 3 hours of core humanities.	
<i>College of Liberal Arts Academic Requirements</i> (See above)	(11) + 3
<i>Requirements for Major in Foreign Language and International Trade</i>	68-76
Courses in a Language (Chinese, French, German, Japanese, Russian or Spanish)	29-37
As prescribed by the program director; must include internship (Foreign Languages and Literatures 495).	
Business Related Courses	39
Accounting 220, 230	6
Computer Science 212 or Information Management Systems 229	3
Economics 240, 241	6
Finance 330	3
Management 202, 345; and either Management 304 or Political Science 441	9
Management 208 or Accounting 208 or Economics 308	3
Marketing 304; and either 336 or 435	6
Mathematics 140	3
<i>Electives</i>	3-11

When choosing electives, the area of specialization should be considered. In the past students have taken electives in Computer Science, East Asian Studies, Economics, Finance, Food and Nutrition, Geography, History, Management, Marketing, Philosophy, Political Science and Sociology.

Total	120
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Foreign Language International Trade Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
Foreign Language(100-Level)	4	4	Foreign Language(200-Level).....	4	4
ENGL 101, 102	3	3	MGMT 208	3	-
MATH 139, 140	3	3	ECON 240	-	3
PSYC 102	3	-	Humanities	3	-
SPCM 101	-	3	Science	-	3
Human Health	2	-	MGMT 202	3	-
ECON 241	-	3	CS 212	-	3
			ACCT 220, 230	3	3
Total	15	16	Total	16	16
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
Foreign Language	3-4	6	Foreign Language	3	3
Fine Arts	3	-	Foreign Lang or Elect ¹	3	2-3
Science	3	3	FL 495 ²	-	3
MGMT 345	3	-	ECON 302I	3	-
MKTG 304	-	3	Multicultural Course	-	3
FIN 330	3	-	MGMT 304	3	-
Social Science	-	3	MKTG 336	3	-
Total	15-16	15	Total	15	11-12

¹Elective only if foreign language section does not require this course.
²Although a major part of the paperwork for Foreign Language 495 (Internship) takes place in the last semester of the senior year, students usually go on their internship the summer after the senior year. Oral and written proficiency exams are required prior to the internship.

Foreign Languages and Literatures (Department, Majors, Courses)

Majors and minors are offered in classics (minor: classical civilization), French, German, Russian, and Spanish. Minors are also offered in Chinese, classical civilization, classical Greek, East Asian civilization, Japanese, and Latin. Transfer students planning to major in a foreign language must complete a minimum of 12 semester hours of courses including at least one 300 or 400 level language/grammar course in that language at Southern Illinois University at Carbondale. No courses completed with a grade below C will be counted toward fulfillment of the requirements for a major. For modern foreign languages, both oral and written language competency must be demonstrated in separate examinations at the advanced level. Students should plan to take these exams no later than two semesters prior to graduation so there is time to make up possible deficiencies before graduation. For students preparing to teach in the public schools, the oral and written competency examinations at the intermediate high level must be passed before student teaching is begun. Every foreign language major must have a departmental advance registration form, signed by the appropriate adviser in the department, before proceeding to college advisement and registration. It is strongly recommended that students who are planning to study abroad consult with their departmental adviser before leaving if they expect to transfer credit to SIUC.

Proficiency Examination Policy. Unit credit (without grade) on the basis of proficiency may be obtained through the Department in Chinese, French, German, Greek, Japanese, Latin, Russian and Spanish. This may be accomplished either by examination and/or by a validating course.

By Examination: Credit through examination may be given for first and second year basic skills courses only. Credit is given by the semester in Greek and Latin; all others only by the year. CLEP examinations in French, German and Spanish, and non-CLEP examinations in Latin are offered by the Testing Center Office in Woody Hall. Examinations in Chinese, Greek, Japanese and Russian are offered by the respective language sections (Classics, East Asian, Russian) and arrangements for these examinations should be made with the section head of the appropriate language. (See *Proficiency Examinations* under Academic Regulations earlier in this catalog for University guidelines.)

By Validating Course: Only basic language skills courses taken at SIUC, up to and including the first skills course at the three-hundred level, may serve as validating courses. (See department for specific list.) Upon receiving a grade of A or B in a validating course, a student may, upon petitioning, be granted credit for up to two of the immediately preceding basic skills courses.

Bachelor of Arts Degree, College of Liberal Arts

(WITHOUT SECONDARY SCHOOL TEACHING CERTIFICATE)

<i>University Core Curriculum Requirements</i>	41
<i>College of Liberal Arts Academic Requirements</i> (See above.)	14
Though not required, a minor of at least 15 hours is recommended. This may be in another foreign language or in any other department within the College of Liberal Arts, but must be approved by the student's departmental adviser; a minor outside the college must be approved by the dean of the college as well.	
See the Spanish description for a major program which combines a Spanish major with a minor in office systems and specialties.	
<i>Requirements for Major in Foreign Language</i>	36 ¹
Except for classics, 100-level courses will not count toward the major and at least 12 hours must be in courses on the 400-level.	
<i>Electives</i>	29
<i>Total</i>	120

Bachelor of Arts Degree, College of Liberal Arts

(WITH SECONDARY SCHOOL TEACHING CERTIFICATION)

<i>University Core Curriculum Requirements</i>	41
To include ENGL 101, 102; SPCM 101; MATH 110 or 113; PHYS 101, GEOL 110 or CHEM 106; PLB 115, 117 or ZOOL 115; PLB 301i, 303i or ZOOL 312i; HIST 101a ² ; AD 101, HIST 201, MUS 103 or THEA 101; ENGL 121 or 204; AD 227, ANTH 202, ENGL 205, HIST 202, 210, LING 201, PHIL 210, 211 or SOC 215; POLS 114; HIST 110; HED 101 or PE 101.	
<i>College of Liberal Arts Academic Requirements</i> (See above)	14
Though not required, a minor of at least 15 hours is recommended. This may be in another foreign language or in any other department within the College of Liberal Arts, but must be approved by the student's departmental adviser; a minor outside the college must be approved by the dean of the college as well.	
<i>Requirements for Major in Foreign Language</i>	36 ¹
100-level courses will not count toward the major and at least 12 hours must be in courses on the 400-level. Foreign Languages and Literatures 436 will be one of those courses required on the 400-level for majors in French, German, and Spanish.	
<i>Education Requirements</i>	31

Professional Education Requirements	28
See Teacher Education Program.	
Psychology 102	3
Electives	<u>1-2</u>
Total	123-124

Bachelor of Science Degree, College of Education

For College of Education students majoring in a foreign language, the scheduling of those classes which apply to the major must be done with the appropriate adviser from the Department of Foreign Languages and Literatures.

University Core Curriculum Requirements	41
To include SPCM 101; ENGL 101 and 102; MATH 110 or 113; PHYS 101, GEOL 110 or CHEM 106; PLB 115, 117 or ZOOL 115; PLB 301i, 303i or ZOOL 312i; HIST 101a ² ; AD 101, HIST 201, MUS 103 or THEA 101; ENGL 121 or 204; AD 227, ANTH 202, ENGL 205, HIST 202, 210, LING 201, PHIL 210, 211 or SOC 215; POLS 114; HIST 110; HED 101 or PE 101.	
Requirements for Major in Foreign Language	36 ¹
100-level courses will not count toward the major and at least 12 hours must be in courses at the 400-level. Foreign Languages and Literatures 436 will be one of those courses required at the 400-level for majors in French, German, and Spanish.	
Education Requirements	31
Professional Education Requirements	28
See Teacher Education Program.	
Psychology 102	3
Electives	<u>12</u>
Total	120

¹See individual language listings for specific requirements.
²Required to meet non-western civilization/third world culture requirement.

Placement. The student who has completed only one year of foreign language in high school normally begins with the first semester course. The student who has successfully completed two years of study in high school of any language currently taught in the department may begin with the second year level without having to take the placement proficiency examination. A student majoring in a foreign language who has taken four years of that language in high school is expected to begin with 300-level courses and to take more upper level courses. Those students who have successfully completed three or more years of high school language should consult the departmental adviser for that language.

International Public Service Specialization

Foreign Language with a specialization in International Public Service (IPS) is designed for those students whose interests are not focused on language alone, but on its application or use in a career in one of the many forms of international public service in either the governmental or private sectors. The program of study includes all language skill courses normally required for the major in French, German, Russian, or Spanish, an internship or study abroad experience, a core of required courses for the IPS specialization, and appropriate area studies courses in history, political science, anthropology and geography.

Minor

A minor in a foreign language consist of a minimum of 18 hours in courses above the first-year level of which 3 hours must be taken in a regularly scheduled 300- or 400-level course at Southern Illinois University at Carbondale. See individual language listings for specific requirements. State certification requirements, in terms of total semester hours of subject matter courses, may be met in part by counting first-year foreign language courses or by doing additional advanced work. No courses completed with a grade below C will be counted toward fulfillment of the requirements for a language minor.

A minor in classical civilization or East Asian civilizations is constituted by 15 hours of courses to be selected in consultation with the appropriate sectional adviser.

Secondary Concentration for Majors in the College of Business and Administration

The Department of Foreign Languages and Literatures participates with the College of Business and Administration's major program in business and administration by offering a secondary concentration of 20-23 hours for those students who wish to formulate an academic program leading to a career specialization which combines business and a foreign language.

The secondary concentration varies according to the language chosen, but does not normally exceed 23 hours and involves course work from the 100 through the 400 levels. For specific course requirements in the respective languages, interested students should contact advisers in the Department of Foreign Languages and Literatures.

CHINESE

Minor

<i>Chinese courses above 100 level</i>	18
200 level: 201a,b	8
300 level or 400 level	10

CLASSICS

Bachelor of Arts Degree, College of Liberal Arts

<i>Classics courses and courses from related disciplines</i>	36
Original Greek and Latin courses, two years of one language or one year of each	12-16
Electives approved by classics adviser from offerings in classics and related disciplines	20-24

Minor in Greek

Greek courses above 100-level	18
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Minor in Latin

Latin courses above 100-level (388 and 488 may not be counted); 320 recommended	18
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Classics Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
CLAS (Latin) 133a,b	4	4	CLAS 202a,b	3	3
ENGL 101, 102	3	3	CLAS 130a,b	4	4
Math	3	-	Social Science	3	3
Fine Arts	-	3	Science	3	3
FL 230	3	-	Multicultural	3	-
FL 101	-	3	SPCM 101	-	3
Human Health	2	-			
Elective	-	3			
Total	15	16	Total	16	16
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
Latin 300-Level	3	3	Latin 400-Level	3	3
Greek 201a,b	3	3	Greek 300-Level	3	3
CLAS 270 or 271	3	-	Elective	9	6
CLAS 401	-	3			
CoLA Science	3	-			
FL 310i	-	3			
Elective	3	3			
Total	15	15	Total	15	12

Minor in Classical Civilization

Courses to be selected in consultation with classics adviser from Greek, Latin, or classical civilization: Classics 101, 225, 270, 271, 310, 332, 405, 406, 496, Foreign Languages and Literatures 101, 230, and approved courses in related disciplines. 15

¹Classical civilization includes all classics courses above the 100-level for which no knowledge of Greek or Latin is required.

EAST ASIAN CIVILIZATION

Minor

Courses in Chinese and Japanese selected in consultation with adviser 15¹

¹18 hours is required for state certification.

FRENCH

Bachelor of Arts Degree, College of Liberal Arts

French courses above 100 level	36
200 level: 201a,b (220 recommended; does not usually count toward major or minor)	8 ¹
300 level: 320a,b plus any other 300 level courses	14
400 level: any combination of 400 level courses	14
At least one literature course must be taken at either the 300 or the 400 level.	

Bachelor of Science Degree, College of Education, or Bachelor of Arts Degree, College of Liberal Arts (with secondary school certification)

French courses above 100 level	36
200 level: 201 a,b (220 recommended; does not usually count toward major or minor)	8 ¹
300 level: 320a,b plus any other 300 level courses	14
400 level: Foreign Languages and Literatures 436, plus any combination of 400 level courses	14
At least one literature course must be taken at either the 300 or the 400 level.	

French Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
French 123a,b.....	4	4	French 201a,b.....	4	4
English 101, 102.....	3	3	SPCM 101.....	3	-
Core Math.....	3	-	Core Humanities.....	-	3
Core Fine Arts.....	-	3	Core Science.....	3	3
Core Social Science.....	3	3	Elective.....	3	3
Core Human Health.....	2	-	Elective.....	3	3
Elective.....	-	3			
Total.....	15	16	Total.....	16	16
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
French 320a,b.....	3	3	French 410, 411.....	3	3
French 321.....	3	-	French 430 or 435.....	4 or 3	-
French 335 or 330.....	-	3	French 470.....	-	4
CoLA Science.....	3	-	Interdisciplinary Course.....	3	-
Multicultural Course.....	-	3	French 414 or 440.....	-	3
Elective.....	6	6	Elective.....	5	3
Total.....	15	15	Total.....	14 or 15	13

Minor

French courses above 100 level	18
200 level: 201a,b	8 ¹
300 level: 320a,b plus any other 300 level courses	10

¹With the approval of the French section, one semester of 220 may be counted toward the major or minor, in which case the 300 or 400-level requirements would be reduced by 2 hours for a major or minor.

GERMAN

At least one course in the history of Germany or Central Europe is recommended for all students majoring in German. Credit must be earned in at least one regularly scheduled 400-level course taken on the Southern Illinois University at Carbondale campus.

Bachelor of Arts Degree, College of Liberal Arts

Courses above 100 level	36
200 level: 201a,b (201c recommended)	8-11
300 level: 320, plus any other 300-level courses	10-13
400 level: Any combination of 400 level courses	12
German electives (300 or 400 level)	3
At least one literature course must be taken at either the 300 or the 400 level.	

Bachelor of Science Degree, College of Education or Bachelor of Arts Degree, College of Liberal Arts (with secondary school certification)

Courses above 100 level	36
200 level: 201 a,b (201c recommended)	8-11
300 level: 320, plus any other 300-level courses	10-13
400 level: Foreign Languages and Literatures 436, plus any other 400 level courses	12
German electives (300 or 400 level)	3
At least one literature course must be taken at either the 300 or the 400 level.	

German Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
German 126a,b	4	4	German 201a,b	4	4
English 101, 102	3	3	SPCM 101	3	-
Math	3	-	Humanities	-	3
Fine Arts	-	3	Science	3	3
Social Science	3	3	Elective	3	3
Human Health	2	-	Elective	3	2
Elective	-	3			
Total	15	16	Total	16	15
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
German 320a,b	4	3	German 410, 411	3	3
German 330 or 335	3	-	German 440	3	-
German 371 or 370	-	3	German 480	-	3
CoLA Science	3	-	Interdisciplinary Course	3	-
Multicultural Course	-	3	German 493	-	3
Elective	6	6	Elective	6	3
Total	16	15	Total	15	12

Minor	
Courses above 100 level	18
200 level: 201a,b (201c recommended)	8-11
300 level: 320a,b	7
German electives (300 or 400 level including at least one regularly scheduled course)	0-3

GREEK

(SEE CLASSICS)

JAPANESE

Minor	
Japanese courses above 100 level	18
200 level: 201a,b	8
300 level or 400 level	10

LATIN

(SEE CLASSICS)

RUSSIAN

Bachelor of Arts Degree, College of Liberal Arts

Russian courses above 100 level	36
200 level: 201a,b	8
300 level: Any combination of 300 level courses	12
400 level: Any combination of 400 level courses including at least one literature course	12
Russian electives (300 or 400 level)	4

Russian Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
Russian 136a,b	4	4	Russian 201a,b	4	4
ENGL 101, 102	3	3	Humanities	3	-
Math	3	-	Russian 220	-	2
Fine Arts	-	3	Science	3	3
Social Science	3	3	SPCM 101	3	-
Human Health	2	-	Russian 470	-	3
Elective	-	3	Elective	3	3
<i>Total</i>	15	16	<i>Total</i>	16	15
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
Russian 305	4	-	Russian 480	3	-
Russian 306	-	3	Russian 411	-	3
Russian 330	3	-	Russian 320	4	-
Russian 465	-	3	Russian 415	-	3
CoLA Science	3	-	Interdisciplinary Course	3	-
Multicultural Course	-	3	Elective	2	6
Elective	3	3	Elective (CP 467)	3	-
Elective (HIST 437a,b)	3	3	<i>Total</i>	15	12
<i>Total</i>	16	15			

Minor

Russian courses above 100 level	18
200 level: 201a,b	8
Any combination of 300 or 400 level courses	10

SPANISH**Bachelor of Arts Degree, College of Liberal Arts**

<i>Spanish courses above 100 level</i>	36
200 level: 201a,b	8
300 and 400 levels: one semester of 305, 306, 320, and 411, plus any combination of 300 or 400 level courses which includes a literature course and at least nine additional 400 level hours	21-24
Spanish electives (only one semester of 220 may be counted toward the major)	4-7

Bachelor of Arts Degree, College of Liberal Arts (with a minor in secretarial and office specialties, for bilingual secretaries)

<i>Spanish courses above 100 level</i>	36
200 level: 201a,b	8
300 and 400 levels: one semester of 305, 306, 320, and 410, plus any combination of 300 or 400 level courses which includes at least nine additional 400 level hours	21-24
Spanish electives (only one semester of 220 may be counted toward the major)	4-7

See office systems and specialties for a description of minor requirements.

Bachelor of Science Degree, College of Education or Bachelor of Arts Degree, College of Liberal Arts (with secondary school certification)

<i>Spanish courses listed above 100 level</i>	36
200 level: 201a,b	8
300 and 400 levels: one semester of 305, 306, 320, 411, Foreign Languages and Literatures 436, plus any combination of 300 or 400	

level courses which includes a literature course and at least six additional 400 level hours	21-24
Spanish electives (only one semester of 220 may be counted toward the major)	4-7

Spanish Suggested Curricular Guide

FIRST YEAR		FALL	SPRING	SECOND YEAR		FALL	SPRING
Spanish 140a,b.....	4	4		SPAN 201a,b.....	4	4	
ENGL 101, 102	3	3		SPCM 101	3	-	
Math	3	-		Spanish 220	-	2	
Fine Arts.....	-	3		Science	3	3	
Social Science	3	3		Elective	3	-	
Human Health	2	-		Humanities	-	3	
Elective.....	-	3		Elective	3	3	
Total.....		15	16	Total		16	15
THIRD YEAR		FALL	SPRING	FOURTH YEAR		FALL	SPRING
Spanish 320.....	4	-		Spanish 411	3	-	
Spanish 370 or 371	-	3		Spanish 400-Level	3	3	
Spanish 306.....	3	-		Spanish 400-Level	-	3	
Spanish 305.....	-	2		Spanish 305	2	-	
CoLA Science	3	-		Elective	-	3	
Multicultural Course.....	-	3		Interdisciplinary Course	3	-	
Elective.....	6	6		Elective	3	5	
Total.....		16	14	Total		14	14

Minor

Spanish courses above 100 level	18
200 level: 201a,b	8
300 level: 306 and 320	7
Spanish electives (only one semester of 220 may be counted toward the minor)	3

Foreign Languages and Literatures Faculty

Aydt, Judith , Assistant Professor, M.A., Southern Illinois University, 1966.	Kilker, James , Professor, <i>Emeritus</i> , Ph.D., University of Missouri at Columbia, 1961.
Bender, M. Lionel , Professor, <i>Emeritus</i> , Ph.D., University of Texas at Austin, 1968.	Kim, Alan Hyun-Oak , Associate Professor, Ph.D., University of Southern California, 1985.
Betz, Frederick , Professor, Ph.D., Indiana University, 1973.	Liedloff, Helmut , Professor, <i>Emeritus</i> , Ph.D., Phillips University, Germany, 1956.
Bork, Albert W. , Professor, <i>Emeritus</i> , Doctor en Letras, National University of Mexico, 1944.	Lowe-Dupas, Hélène , Assistant Professor, Ph.D., Ohio State University, 1993.
Cáceres, Alejandro , Assistant Professor, Ph.D., Indiana University, 1992.	McBride, Charles , Associate Professor, Ph.D., University of Texas, 1968.
Davis, J. Cary , Professor, <i>Emeritus</i> , Ph.D., University of Chicago, 1936.	Meinhardt, Warren , Associate Professor, Ph.D., University of California at Berkeley, 1965.
Edwards, Robert W. , Associate Professor, Ph.D., University of Texas at Austin, 1988.	Neufeld, Anna K. , Assistant Professor, <i>Emerita</i> , M.A., University of Kansas, 1937.
Fair-Christianson, Janet K. , Assistant Professor, Ph.D., University of Chicago, 1993.	O'Brien, Joan , Professor, <i>Emerita</i> , Ph.D., Fordham University, 1961.
Gobert, David L. , Professor, <i>Emeritus</i> , Ph.D., University of Iowa, 1960.	Orechwa, Olga , Associate Professor, <i>Emerita</i> , Ph.D., Ukrainian Free University, Germany, 1970.
Hammond, Charles E. , Associate Professor, Ph.D., Columbia University, 1986.	Sanjabi, Maryam , Assistant Professor, Ph.D., University of Paris-Sorbonne, 1992.
Hartman, Steven Lee , Associate Professor, Ph.D., University of Wisconsin, 1971.	Speck, Charles , Assistant Professor, <i>Emeritus</i> , Laurea in Diritto Canonico, Pontifical Lateran University, Italy, 1963.
Hartwig, Hellmut A. , Professor, <i>Emeritus</i> , Ph.D., University of Illinois, 1943.	
Keller, Thomas , Associate Professor and Chair, Ph.D., University of Colorado, 1975.	

Timpe, Eugene F., Professor, Ph.D., University of Southern California, 1960.

Ulner, Arnold, Assistant Professor, Ph.D., University of Missouri at Columbia, 1972.

Vogely, Maxine, Assistant Professor, *Emerita*, Ph.D., University of Illinois, 1969.

Wilkinson, Mildred, Assistant Professor, *Emerita*, M.A., Southern Illinois University, 1965.

Williams, Frederick, Associate Professor, Ph.D., Cornell University, 1976.

Winston-Allen, C. Anne, Assistant Professor, Ph.D., University of Kansas, 1979.

Winters, Margaret E., Professor, Ph.D., University of Pennsylvania, 1975.

Woodbridge, Hensley, Professor, *Emeritus*, Ph.D., University of Illinois, 1950.

Geography (Department, Major, Courses)

Geography is the discipline that deals with the relationship between human beings and their environment. The Department of Geography emphasizes the applied aspects of this theme, environmental planning and management, and geographic techniques such as cartography and spatial analysis. Students may earn a Bachelor of Arts or Bachelor of Science degree through the College of Liberal Arts. All geography majors develop a minor in consultation with the Department of Geography undergraduate program director, which can be fulfilled by taking courses in another department or by an interdisciplinary group of courses based on a topical specialty, for example, in water resources.

Community college and transfer students interested in geography are encouraged to visit the department to determine possibilities for waivers, proficiencies, and transfer credit substitution.

Honors in geography is a special three semester program available to majors with an overall grade point average of 3.00 or better. Interested students should apply during the junior year for departmental consent to initiate an honors program.

Students with a minor in geography must take Geography 103 or 300, three 300-level courses and one 400-level course. Geography 300 has been approved as a substitute for Geography 103 for the University Core Curriculum. Social Studies majors in the College of Education with a 9-hour concentration in geography must take Geography 103 or 300 and complete their concentration with electives from geography.

The core program provides a common background for all geography majors. The major then selects a series of 400-level courses to satisfy career goals. Three special interest sequences are as follows.

Cartography and Geographic Information Management. This option stresses cartography, quantitative techniques, and geographic data management, and is designed for those who wish to go into careers in which geographic techniques are necessary skills.

Environmental Planning. This option is for those interested in careers in environmental management and planning. The courses deal with the economic, social, and political aspects of environmental planning, techniques of evaluation and principles of the environmental systems under consideration.

Geography General. This option gives maximum flexibility for those seeking a broad understanding of the field of geography, or those wishing to combine several areas of interest.

Bachelor of Arts or Bachelor of Science Degree, College of Liberal Arts

These courses provide the base for those seeking a broad understanding of the field of geography and who have interests in preparing for graduate study or in applying geography in teaching, industry, or government.

University Core Curriculum Requirements	41
College of Liberal Arts Academic Requirements	14
Requirements for Major in Geography	30-35
Geography Core Courses: 300, 303i, 304, 410	13
Special Interest Sequence (one of the following):	
Cartography and Geographic Information Management:	
310, 404, 406a, 406b, 416, 418a, 418b and 408 or 420	18
Environmental Planning: 320, 422, 424, 426, and selection	
from 400, 425, 427, 430, 432, 434, 436, 471 and two courses	
from one of the following groups: 430, 434, 436, 471, 475 or	
435, 452, 454, 456, 458, 459	21-22
Geography General: Any 400-level courses	17-19
Minor (or interdisciplinary selection to complement major)	15
Electives ¹	15-20
Total	120

¹Geography requires one college-level course in mathematics in addition to the University Core Curriculum requirement. This course does not contribute to the credit hours required for the major. It may be taken as an elective.

Minor

A minor in geography requires	15-16
Geography 103 or 300	3
Any three: 302, 304, 306, 310	9
400 level courses	3-4

Geography Faculty

Arey, David G., Associate Professor, Ph.D., Clark University, 1969.	Horsley, A. D., Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1974.
Baumann, Duane D., Professor, Ph.D., Clark University, 1968.	Irwin, Daniel R., Associate Professor, <i>Emeritus</i> , Ph.D., Syracuse University, 1972.
Bhattacharyya, Jnanabrata, Associate Professor, Ph.D., University of Delhi, India, 1969.	Jones, David L., Professor, <i>Emeritus</i> , Ph.D., Pennsylvania State University, 1960.
Beazley, Ronald I., Professor, <i>Emeritus</i> , Ph.D., Purdue University, 1954.	Lant, Christopher, Associate Professor and Chair, Ph.D., University of Iowa, 1988.
Bennett, David A., Assistant Professor, Ph.D., University of Iowa, 1994.	Lieber, Stanley R., Professor, Ph.D., University of Iowa, 1974.
Christensen, David E., Professor, <i>Emeritus</i> , Ph.D., University of Chicago, 1956.	Perk, H. F. W., Lecturer, <i>Emeritus</i> , A.B., University of California at Los Angeles, 1951.
Denise, Paul S., Assistant Professor, <i>Emeritus</i> , Ph.D., University of California at Berkeley, 1974.	Poston, Richard W., Professor, <i>Emeritus</i> , B.A., University of Montana, 1940.
Duram, Leslie A., Assistant Professor, Ph.D., University of Colorado at Boulder, 1994.	Sharpe, David M., Professor, Ph.D., Southern Illinois University at Carbondale, 1968.
Dziegielewski, Benedykt, Associate Professor, Ph.D., Southern Illinois University, 1983.	

History (Department, Major, Minor, Courses)

A major in history consists of thirty-six semester hours of history courses in addition to core curriculum requirements. Students who plan advanced study in preparation for college teaching or other professional work are advised to take added work.

A number of different patterns are available for students anticipating various futures. Students should consult with departmental advisers to choose the pattern that fits their needs. The basic regulation is that, for a course to count toward the major, it must be approved in advance by one of the advisers in the department. Normally the department will accept a substantial part of the credits in history taken in other ac-

credited institutions. In every case, transfer students must have taken at least 18 semester hours in history at Southern Illinois University at Carbondale.

Advisers are available in the Department of History to assist students in planning their programs in accordance with current University and departmental regulations. Normally courses must represent at least two areas of history (United States, European, and Third World) and should be distributed chronologically as well as geographically. Students must also complete a minimum of four courses at the 400 level and they must write two research papers in history. The first paper usually is done in History 392, and the second paper is written in a regularly scheduled 400-level course. Both papers meet the College of Liberal Arts Writing Across the Curriculum (WAC) requirement.

All history majors should meet with the department's undergraduate advisers each semester to keep up to date the records of their progress toward the degree and to receive advance approval of their courses. Transfer students should report to the department prior to their first semester of attendance. A C average in the major is required for graduation. A 2.5 average in the major is required before student teaching will be approved by the department.

Students with exceptional scholarly promise may be invited into the departmental honors program which begins with a colloquium and continues with an honors seminar and thesis prepared under the direction of a member of the department. Graduation with departmental honors in history is given to those who successfully complete the program.

Bachelor of Arts Degree, College of Liberal Arts

<i>University Core Curriculum Requirements</i>	41
<i>College of Liberal Arts Academic Requirements (See above)</i>	14
<i>Requirements for Major in History</i>	36 ¹
History 205a,b or equivalent	6
History 300 and 301 or equivalent	6
History 392 or equivalent	3-4
History electives, 300 level or above distributed in two fields of history	20-21
<i>Electives</i>	30
These may include 31 hours in professional education for teacher certification ²	
Total	121

Bachelor of Science Degree, College of Education

<i>University Core Curriculum Requirements</i>	41
To include ENGL 101, 102 and 121 or 204; SPCM 101; MATH 110 or 113 or approved substitute; CHEM 106, GEOL 110 or PHYS 101; PLB 115, 117 or ZOOL 115; PLB 301i, 303i or ZOOL 312i; HIST 101a ¹ or non Western Civilization Substitute; AD 101, MUS 103, HIST 201 or THEA 101; POLS 114; PSYC 102; ANTH 202, HIST 202, 210 or SOC 215; HED 101 or PE 101.	
<i>Requirements for Major in History</i>	36 ¹
History 205a,b and two additional world history courses ³	12-14
History 300 and 301 and three additional U.S. history courses	14-16
History 392 or equivalent	3-4
History electives	2-7
<i>Education Requirements</i>	34
Professional Education Requirements	28
(See Teacher Education Program)	
Additional Certification Requirements	6
Curriculum and Instruction 469	

Psychology 102	
Electives	9
Total	120

¹At least twelve hours must be taken at the 400 level.
²Students in CoLA seeking teacher certification should select courses as described under the College of Education.
³World history study should include at least three hours other than European and U.S. history.

Minor

A minor in history consists of 18 semester hours. The student is advised to balance courses between at least two of the three fields of American, European, or Third World history. Transfer students, in order to have a minor in history, must have taken at least nine semester hours in history at Southern Illinois University at Carbondale.

History Faculty

- Allen, Howard W., Professor, Ph.D., University of Washington, 1959.
Allen, James S., Professor, Ph.D., Tufts University, 1979.
Ammon, Harry, Professor, *Emeritus*, Ph.D., University of Virginia, 1948.
Barton, H. Arnold, Professor, Ph.D., Princeton University, 1962.
Batinski, Michael C., Associate Professor, Ph.D., Northwestern University, 1969.
Bean, Jonathan J., Assistant Professor, Ph.D., The Ohio State University, 1994.
Bengtson, Dale R., Assistant Professor, Ph.D., Hartford Seminary Foundation, 1971.
Carr, Kathryn, Associate Professor, Ph.D., University of Chicago, 1987.
Carrott, M. Browning, Associate Professor, Ph.D., Northwestern University, 1966.
Chen, Jian, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1990.
Conrad, David E., Professor, *Emeritus*, Ph.D., University of Oklahoma, 1962.
Detwiler, Donald S., Professor, Dr. Phil., Göttingen University, Germany, 1961.
Dotson, John E., Professor, Ph.D., Johns Hopkins University, 1969.
Fladeland, Betty L., Distinguished Professor, *Emerita*, Ph.D., University of Michigan, 1952.
Gardiner, C. Harvey, Professor, *Emeritus*, Ph.D., University of Michigan, 1945.
Gold, Robert L., Professor, *Emeritus*, Ph.D., University of Iowa, 1964.
- Haller, John S., Professor, Ph.D., University of Maryland, 1968.
Kuo, Ping-Chia, Professor, *Emeritus*, Ph.D., Harvard University, 1933.
Lieberman, Robbie, Associate Professor, Ph.D., University of Michigan, 1984.
Morgan, Marjorie L., Associate Professor, Ph.D., Tulane University, 1988.
Murphy, James B., Associate Professor, *Emeritus*, Ph.D., Louisiana State University, 1968.
O'Day, Edward J., Associate Professor, A.M., Indiana University, 1956.
Shelby, Lon R., Professor, *Emeritus*, University of North Carolina, 1962.
Simon, John Y., Professor, Ph.D., Harvard University, 1961.
Stocking, Rachel L., Assistant Professor, Ph.D., Stanford University, 1994.
Vyverberg, Henry S., Professor, *Emeritus*, Ph.D., Harvard University, 1950.
Weeks, Theodore, Assistant Professor, Ph.D., University of California-Berkeley, 1992.
Werlich, David P., Professor and *Chair*, Ph.D., University of Minnesota, 1968.
Wilson, David L., Professor, Ph.D., University of Tennessee, 1974.
Wu, Tien-Wei, Professor, *Emeritus*, Ph.D., University of Maryland, 1965.
Zobairi, Riaz H., Adjunct Associate Professor, Ph.D., Southern Illinois University, 1971.

Linguistics (Department, Major, Courses)

Language is both a means of social communication and a unique property of the human mind. As such, linguistics -- the scientific study of language --has a broad appeal to students who are interested in the social sciences, the humanities, computer science, or the life sciences. The undergraduate program in linguistics helps students understand the diversity of human modes of communication, the social and psychological origins of language, and the processes by which languages are learned and lost. A major in linguistics thus provides students with a focused but broad-based education in the liberal arts. In addition, the way linguists think about their subject

has greatly influenced the development of other disciplines such as anthropology, computer science, language teaching, philosophy, psychology, and sociology. A degree in linguistics will thus be of great value to students intending to pursue careers in those fields.

Graduates of the linguistics program who enter the work force immediately after graduating find employment in a wide variety of settings: as teachers, writers, translators, editors, civil servants, community developers, etc. Graduates who go on to advanced study find themselves well prepared for professional careers in fields such as linguistics, language teaching, educational administration, language planning, language research, speech pathology, lexicography, publishing, and the foreign service.

The major in linguistics consists of a minimum of 34 semester hours comprising a core of basic courses in general linguistics plus a variety of electives. The core of the linguistic major consists of 22 semester hours in Linguistics 104, 200, 300, 402, 405, 406, and 408. Majors are required to obtain a grade of C or better in each of these core courses. In addition, 12 semester hours of electives must be selected from other linguistic courses offered at the 400 level. Students who have received credit for 200 and 300 will not receive additional credit for 401.

Since the study of linguistics involves familiarity with languages other than one's native language, knowledge of a foreign language is a requirement for a degree in linguistics. This requirement, which also satisfies the foreign language requirement of the College of Liberal Arts, involves either one year of an uncommon or non-Western language or two years of any foreign language. International students whose native language is not English and who have successfully satisfied the requirement of the Office of Admissions and Records for English language proficiency will also have satisfied the Linguistics Department foreign language requirement by offering English as their foreign language.

Bachelor of Arts Degree, College of Liberal Arts

<i>University Core Curriculum Requirements</i>	41
<i>College of Liberal Arts Academic Requirements</i> (See above.)	14
<i>Requirements for Major in Linguistics</i>	34
Core courses: Linguistics 104, 200, 300, 402, 405, 406, and 408 each with a grade of C or better	22
Electives: Courses selected from 400-level linguistics courses	12
<i>Foreign Language Requirements</i> (satisfies the College foreign language requirement)	10-16
<i>Electives</i>	10-29
<i>Total</i>	120

Linguistics Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
ENGL 101 or LING 101	3	-	Multicultural ¹	3	-
ENGL 102 or LING 105	-	3	Human Health	-	2
Core Science	3	3	Interdisciplinary	3	3
Core Humanities	3	3	Foreign Language ²	4	4
Core Social Science	3	3	Composition Course ²	-	3
Core Fine Arts	-	3	LING 104, 200	6	-
Core Math	3	-	LING 300	-	3
<i>Total</i>	15	15	<i>Total</i>	16	15
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
LING 402	3	-	LING 406 ³	3	-
LING 405, 408	-	8	Linguistic Elective	3	3
Linguistic Elective	3	3	Free Elective	9	12
SPCM 101	3	-			
CS 102	3	-			
<i>Total</i>	12	14	<i>Total</i>	15	15

¹ Linguistics 201, Language Diversity in the USA recommended² Meets CoLA Academic requirements³ Meets CoLA Writing-Across-the-Curriculum Requirement

Minor

The minor in linguistics (a minimum of 17 hours) draws upon the core courses of the Department of Linguistics. Students are introduced to the structure of language, the historical development of languages, and the relation of language to the rest of culture. A minor in linguistics would be of special interest to students in anthropology, computer science, English, foreign languages and literatures, mathematics, philosophy, psychology, sociology, speech communication, and communication disorders and sciences.

Course requirements for the minor in linguistics are 104, 200, and 300, plus at least three courses (9 semester hours) from among the following: 402, 404, 405, 406, 408, 415, 440, 450, 453, and 497.

Linguistics Faculty

Angelis, Paul J., Associate Professor and *Chair*, Ph.D., Georgetown University, 1968.

Brutten, Sheila R., Associate Professor, M.A., Southern Illinois University at Carbondale, 1965.

Friedenberg, Joan, Professor, Ph.D., University of Illinois, 1979.

Gilbert, Glenn G., Professor, Ph.D., Harvard University, 1963.

He, Agnes Weiyun, Assistant Professor, Ph.D., University of California at Los Angeles, 1993.

Johnson, Ruth, Assistant Professor, Ph.D., Florida State University, 1993.

Kim, Alan Hyun-Oak, Associate Professor, Ph.D., University of Southern California, 1985.

Lakshmanan, Usha, Associate Professor, Ph.D., University of Michigan, 1989.

Nathan, Geoffrey S., Associate Professor, Ph.D., University of Hawaii, 1978.

Nguyen, Dinh-Hoa, Professor, *Emeritus*, Ph.D., New York University, 1956.

Parish, Charles, Professor, *Emeritus*, Ph.D., University of New Mexico, 1959.

Perkins, Allen Kyle, Professor, Ph.D., University of Michigan at Ann Arbor, 1976.

Redden, James E., Professor, *Emeritus*, Ph.D., Indiana University, 1965.

Wilhelm, Kim Hughes, Assistant Professor, Ph.D., Indiana University, 1992.

Winer, Lise S., Associate Professor, Ph.D., University of the West Indies, 1982.

Winters, Margaret E., Professor, Ph.D., University of Pennsylvania, 1975.

Mathematics (Major)

Opportunities for mathematics majors have expanded greatly in recent years. Mathematics majors become actuaries, statisticians, mathematical computer scientists, applied mathematicians, operations research analysts and mathematical researchers. Mathematics is growing and changing and holds fascinating challenges for inquiring minds.

As an undergraduate mathematics major at Southern Illinois University at Carbondale, you may work toward a Bachelor of Science degree in the College of Science or the College of Education, or a Bachelor of Arts degree in the College of Liberal Arts. The classes in the mathematics major curriculum are small and are taught by senior faculty members. A strong support system of college and departmental advisement is available to you at SIUC throughout the year.

A student planning for employment with a bachelor's degree should consider a minor or a second major in some field in which mathematics is applied. Many students earn a double major in mathematics and computer science. All of the bachelor's degree programs in mathematics, including the Bachelor of Science degree in the College of Education, have sufficient flexibility to allow you to prepare for alternate career possibilities.

To prepare to major in mathematics at SIUC, you should have a solid high school preparation in algebra, geometry in two and three dimensions, and trigonometry,

including a substantial study of functions and graphing. Students transferring to SIUC after two years at a community college should have completed the calculus sequence and, if possible, linear algebra and a course in Pascal or equivalent programming proficiency.

As a mathematics major at SIUC, you will meet with a Department of Mathematics adviser at least once each semester for planning and departmental approval of courses appropriate to your goals and interests.

A grade of C or better is required in every mathematics course used to satisfy departmental requirements.

Option in Statistics

A student majoring in mathematics in the College of Science or the College of Liberal Arts may choose to concentrate in statistics. For this option, the 300- and 400-level course requirements are: 417; 305 or 472; one of 352, 450, 452, or 455; 380 or 480; 483; and at least two of 473, 481, 484, 485.

Bachelor of Arts Degree, College of Liberal Arts

<i>University Core Curriculum Requirements</i>	41
<i>College of Liberal Arts Academic Requirements</i>	11
English Composition	3
Foreign Language	8
<i>Requirements for Major in Mathematics</i>	(3) + 41 ¹
Mathematics 150, 221, 250, 251,	(3) + 11
Computer Science 202 or approved substitute	3
At least one course from each of the following groups:	12
(One group may be waived for students who have a minor in Computer Science)	
Group A: Algebra/Discrete Mathematics/Linear Algebra: 319, 349, 419, 421, 447, 449	
Group B: Analysis: 352, 450, 452, 455	
Group C: Applied Mathematics/Numerical Analysis: 305, 361, 471, 472, 475a	
Group D: Probability/Statistics: 380, 480, 483	
Five additional courses in mathematics numbered above 299 (excluding 311, 314, 319e, 352e, 400, 411, 412, 457, 458)	15
Each student's program must include at least 5 mathematics courses at the 400 level and must be approved by a mathematics department adviser.	
Courses taken Pass/Fail will not count toward the major.	
<i>Secondary Concentration Requirements</i>	6-9
Six to nine hours approved by the Department of Mathematics in one of the following areas: engineering, computer science, physics, economics, busi- ness and administration. A minor in any department of the College of Lib- eral Arts or the College of Science may be substituted for this requirement.	
<i>Electives</i>	15-18
<i>Total</i>	120

¹Numbers in parenthesis are hours which may be substituted into the University Core Curriculum.

Mathematics Major , College of Liberal Arts Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
MATH 111 ¹	5	-	MATH 221	3	-
MATH 150	-	4	MATH 250	4	-
CS 202.....	-	3	MATH 251	-	3
ENGL 101, 102	3	3	MATH 302 or 305.....	-	3
Fine Arts.....	-	3	Human Health	2	-
Humanities.....	3	-	SPCM 101	3	-
Social Science	3	3	Science.....	3	3
			Humanities	-	3
			English Composition	-	3
Total.....	14	16	Total.....	15	15
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
Two 300-400 level Math.....	6	6	300-400 level Math.....	6	6
Secondary Concentration	3	3	Secondary Concentration.....	3	-
Multicultural	3	-	300-400 level Elective	3	8
Interdisciplinary	-	3	Additional Science w/lab	3	-
Foreign Language.....	4	4			
Total.....	16	15	Total.....	15	14

¹Fulfills University Core Curriculum Foundation Skills

Faculty

(SEE MATHEMATICS IN COLLEGE OF SCIENCE)

Museum Studies (Minor)

Museum studies is available as an undergraduate interdisciplinary minor. The purpose of the minor is to introduce students to various aspects of museum work, to acquaint them with the opportunities and problems faced by museums and museum personnel, and to create career opportunities for students who might seek employment in a museum. Emphasis will be placed on actual work situations in such diverse museum functions as exhibition, curation, cataloging, acquisition, and administration.

Minor

The museum studies minor consists of 18 hours, with 12 hours of required core courses and 6 hours of electives.

Core Courses: 12 hours selected from Anthropology 450; Art 207 and 447; Geology 445; History 497; Political Science 446.

Electives: 6 hours selected from Anthropology 400c, 402, 404 or 460; Art 499; Political Science 441; Geology 440; History 490, 493 or 496; or courses listed above which are not used for the core.

Music (School, Major, Courses)

The requirements for entrance and for graduation as set forth in this bulletin are in accordance with the published regulations of the National Association of Schools of Music, of which this school of music is a member.

Students who wish to major in music are assumed to have acquired extensive experience in performing with school groups or as soloist, basic music reading ability, and a strong sensitivity to music and a desire to communicate it to others. Those without such a background will have to complete additional preparation, which may extend the time to graduation beyond four academic years. Music credits earned at other accredited institutions will apply toward requirements, but the transferring

student remains subject to evaluation by the appropriate music faculty for proper placement in the music curriculum.

All Music majors must maintain satisfactory membership in one of the following ensembles: Music 011, 013, 014, 017, 020, 021, or 022 every term in residence. Students are exempt from this requirement during the session of student teaching. Piano performance and piano pedagogy majors may substitute Music 341 during the junior and senior years. Students who are unable to meet the major ensemble entrance requirements for one semester will be placed on probation by the School of Music. Students who are denied entrance into a major ensemble a second time will be reviewed by the undergraduate committee for possible continued probation or suspension from all music degree programs. The choice of major ensembles must be compatible with the student's applied field. Instrumental music education students must enroll in Music 011 for a minimum of one semester. Students also may elect additional large or small ensembles, not to exceed three in any one session.

Each student with a major or minor in music must designate a principal applied field and complete the credits specified within the selected specialization. Changes in the principal applied field are permissible so long as the student accumulates the required credit total and meets the required level of proficiency.

Credits in one's principal applied field are based on private lessons with a member of the faculty; weekly participation in Studio Hour and Convocations (Tuesday, at 10:00 a.m.); and recorded attendance each semester at seven campus recitals or concerts, approved for that purpose by the School of Music faculty. The student may not be a participant. Students who fail to fulfill either the Studio Hour or attendance at campus recitals or concerts requirement will receive a grade of Incomplete, which can be removed only by making up the deficiency during the ensuing semester. A student who wishes to attempt the performance specialization in applied music must have prior approval of the appropriate faculty jury, and thereafter enrolls for and receives two lessons per week for 4 credits per semester.

A student may elect private instruction in a second field or fields, but this is for one credit per semester since the studio hour and recital attendance requirements pertain only to the principal applied field.

Students not majoring or minoring in music may elect private applied music instruction if: 1) they can exhibit sufficient ability; 2) they are participating simultaneously in one of the University performing groups; and 3) faculty loads will allow. Registration is at one credit per semester, with no studio hour or recital attendance requirement. Those wishing such instruction should arrange for an interview and audition with the appropriate instructor.

Students specializing in music education should apply for admission to the Teacher Education Program as soon as they have accumulated 30 semester hours of credit. After being admitted, they must complete a series of specific requirements in order to qualify for student teaching and for the Illinois teaching certificate. Additional information is given under Education, Professional Education Experiences, and Curriculum and Instruction in this chapter.

Upper Division Examination

All Bachelor of Music degree students must pass an upper division examination in order to be admitted to the 340 level of applied music. It is normally taken before finishing 60 hours of academic study and in the second semester of Music 240. The upper division examination for transfer students is normally taken at the end of the first semester at Southern Illinois University at Carbondale. The upper division examination consists of an applied music jury performance before the entire music faculty. Students will provide a complete repertoire list at the time of the jury.

Financial Information

Special grants and awards are available to students enrolled in the School of Music who are qualified and in need of financial assistance. Opportunities for employment in the student work program are excellent. In addition, there are scholarships (tuition awards) and loan programs available through the Office of Student Work and Financial Assistance.

A \$20 instrument maintenance fee is assessed every student enrolled in applied music or using a school instrument each semester. Students are responsible for purchase of their own textbooks, solo literature, and incidental supplies for music lessons and classes. Such costs normally range from \$50 to \$100 per semester.

Bachelor of Music Degree, College of Liberal Arts

University Core Curriculum Requirements	41
Including Music 357a as University Core Curriculum substitute	
Requirements for Major in Music	81
Theory: Music 104a,b; 105a,b; 204; 205; 207; 321; 322	19
History-Literature: Music 102; 357a,b	(3) + 5 ¹
Conducting: Music 316	1
Partial Recital: Music 398	1
Beginning Piano: Music 030	4 ²
Specialization	51
Total	122

MUSIC MAJOR – PERFORMANCE SPECIALIZATION, INSTRUMENTAL (STANDARD ORCHESTRAL AND BAND INSTRUMENTS)

Music 140-440, principal field, 8 semesters	28
Major performing ensembles	6
Music 498	2
Music 461	3
Music 407, 421 or any of 470 series	6
Music 365	2
Approved music electives	4
Total	51

MUSIC MAJOR – PERFORMANCE SPECIALIZATION, GUITAR

Music 140-440, principal field, 8 semester	28
Major performing ensembles	6
Music 107	1
Music 498	2
Music 250	3
Music 407, 421, 461 or any of 470 series	6
Approved music electives	5
Total	51

MUSIC MAJOR – PERFORMANCE SPECIALIZATION, KEYBOARD (PIANO, ORGAN AND HARPSICHORD)

Music 030 not required	
Music 140-440, principal field, 8 semesters	28
Major performing ensembles	6
Music 498	2
Music 461	3
Music 407, 421, or any of 470 series	7
Music 341	3

Approved music electives	2
Total	51

MUSIC MAJOR – PERFORMANCE SPECIALIZATION, VOICE

Music 140-440, principal field, 8 semesters	28
Major performing ensembles	4
Music 498	2
Music 407, 421, 461, or any of 470 series	5
Approved foreign language, 2 semesters	8
Music 346	2
Music 363	2
Total	51

MUSIC MAJOR – PIANO PEDAGOGY SPECIALIZATION

Music 140-440, principal field, 8 semesters	16-22
Major performing ensembles	6
Music 398-1, and 498-2 or 398-2	2-3
Music 110-4, 210, 211, 310, 311, 410-4	16
Approved music electives	5-11
Total	51

MUSIC MAJOR – MUSIC THEORY / COMPOSITION SPECIALIZATION

Music 140-340, principal field, 6 semesters	12
Major performing ensembles	6
Music 280	4
Music 380	4
Music 480, 407, 447 or 481	6
Music 421	2
Music 470 series	6
Approved music electives, 300 level or above	11
Total	51

Bachelor of Music Degree, College of Liberal Arts or Bachelor of Science Degree, College of Education

MUSIC MAJOR – MUSIC EDUCATION SPECIALIZATION

<i>University Core Curriculum Requirements</i>	41
Including Mathematics 108 or higher; English 101, 102, and 121 or 204; Speech Communication 101; Psychology 102; History 110; Political Science 114; one of the following: Plant Biology 301i, 303i or Zoology 312i; one of the following: Chemistry 106, Geology 110 or Physics 101; one of the following: Anthropology 202, History 202, 210 or Sociology 215; one of the following: Plant Biology 115, 117 or Zoology 115; Health Education 101; and Music 357a as a University Core Curriculum substitute.	
<i>Requirements for Major in Music</i>	59
Theory: Music 104a,b; 105a,b; 204, 205; 207; 321, 322	19
History-Literature: Music 102, 357a,b	(3) ¹ + 5
Major performing ensembles	5
Music 140-340, principal field, 6 semesters	12
Music 398	1
Music 031	1
Music 304	2
Approved Music Electives	2

Music education specialization	12
Music 030	2
Music 032, 033, 034, 035	4
Music 305, 316, 318, 324	6
or	
Music 030	4
Music 316, 317, 325	4
Music 306 or 032-036 series	2
Music 363	2
Professional Education Requirements	31
See Teacher Education Program.	
Additional course required for Teacher Certification: History 101a	3
Total	131

¹University Core Curriculum substitute
²Exceptions for Music 030 and consequent credit hour adjustment in keyboard performance, piano pedagogy and instrumental music education specialization.

Music Education Specialization Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
ENGL 101, 102	3	3	Science Group 1, 2.....	3	3
MATH (any except 107 or 114) ..	3	-	HIST 110.....	3	-
SPCM 101	-	3	POLS 114.....	-	3
MUS 104a.....	1	-	MUS 204	1	-
HED 101 or PE 101	-	2	MUS 207	-	2
MUS 105a.....	3	-	MUS 205	3	-
MUS 104b.....	-	1	MUS 030d or 033.....	-	1
MUS 030a.....	1	-	MUS 030c or 032.....	1	-
MUS 105b.....	-	3	MUS 035 or 363b.....	-	1
MUS 140.....	2	-	MUS 034 or 363a	1	-
MUS 030b.....	-	1	MUS 240	2	2
Major ensemble.....	1	1	Major Ensemble.....	1	1
MUS 140.....	-	2	EDUC 311	-	2
MUS 102.....	2	-	EDUC 310	2	-
MUS 031.....	-	1	Music Elective	-	2
Total.....	16	17	Total.....	17	17
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
MUS 357a.....	3	-	HIST 202 or 210 or ANTH 202		
ENGL 121 or 204.....	-	3	or SOC 215	3	-
HIST 101a	3	-	EDUC 401	-	12
MUS 357b.....	-	3	PLB 301i or 303i or ZOOL 312i ..	3	-
MUS 321.....	2	-	EDUC 315	3	-
MUS 340.....	2	2	EDUC 316	2	-
Major Ensemble	1	1	EDUC 317	2	-
MUS 305 or 306.....	-	2	Major Ensemble.....	1	-
MUS 304.....	2	-	MUS 398	1	-
MUS 322.....	-	3	MUS 317 or 318	1	-
PSYC 102.....	3	-	MUS 324 OR 325	1	-
MUS 316.....	-	1			
EDUC 314	2	-			
EDUC 308.....	-	3			
Total.....	18	18	Total.....	17	12

Bachelor of Arts Degree, College of Liberal Arts

The Bachelor of Arts degree is individually tailored to meet the educational goals of each student pursuing it. Three areas of specialization are available: Open Studies, Music Theater, and Music Business. All specializations have a common core of 18 to 19 hours of music literature and music theory courses.

Of the 56 to 57 hours required to complete the Open Studies Specialization, the required courses are Music 357a,b, 499 and 11-16 hours of approved music electives. In addition, at least one year of foreign language is required. This can be met by one of the following: (a) passing an 8-hour 100-level sequence in one language; (b) by earn-

ing 8 hours of 100-level credit in one language by proficiency examination; or (c) completing three years of one language in high school with no grade lower than C. The 29 to 34 core of elective hours necessary to complete the degree program are selected by the student with the approval of the student's faculty sponsor and the undergraduate committee. At least 40 hours toward the B.A. Open Studies Specialization must be at the 300-400 level. This planning should be done during the first semester of the student's admittance to the School of Music with undergraduate committee approval secured no later than the end of the second semester. Changes may be made if agreed upon by the student, the undergraduate committee and the student's faculty sponsor. The B.A. degree does not provide the necessary prerequisites for graduate study in a Master of Music degree program.

Of the 55 to 56 hours required to complete the Music Business Specialization, 18 to 19 hours are in specific music courses, 14 to 15 hours in music electives, and 27 hours of accounting, economics, finance and marketing courses.

Of the 55 hours required to complete the Music Theater Specialization, 20 hours are in music, 18 hours in theater, 8 hours in a foreign language, 3 hours in science and 6 hours in physical education (dance)

Bachelor of Arts Degree, College of Liberal Arts

<i>University Core Curriculum Requirements</i>	41
Including Music 357a as University Core Curriculum substitute	
<i>Requirements for Major in Music</i>	80
Theory: Music 104a,b; 105a,b	8
Literature and History: Music 102, 357a,b	(3) + 5 ¹
Major performing ensembles	4
Applied Music 140-240, principal field, 4 semesters	7-8
Specialization (see below)	55-56
<i>Total</i>	121

MUSIC MAJOR – OPEN STUDIES SPECIALIZATION

Music 499	2
Approved Music Electives	11-16
Foreign Language	8
Elective Core	29-34
<i>Total</i>	55-56

MUSIC MAJOR – MUSIC THEATER SPECIALIZATION

Foreign Language	8
Science.....	3
<i>Required Music Courses</i>	20
Music 203, 205.....	4
Music 030a,b,c.....	3
Music 346, 347, 363a,b 364, 468.....	10
Approved Music Theater or Opera History elective.....	3
<i>Required Department of Theater Courses</i>	18
Theater 217, 303a, 317a, 403	12
Approved Theater Electives.....	6
<i>Required Department of Physical Education Courses</i>	6
Physical Education 102a, 103c, 103f	
<i>Total</i>	55

MUSIC MAJOR – MUSIC BUSINESS SPECIALIZATION

Required Music Courses	
Music 030, 2 semesters	2
Music 031	1
Music 032-1, 033-1, 034-1, 035-1, 036-1	5
Music 305	2
Music 174, 499	6
Music 420	1-2
Approved Music Electives	14-15
Required Business Courses	
Accounting 220, 230	6
Management 304	3
Economics 240	(3) ³
Finance 280	3
Marketing 304, 363, 401, 438	12
Total	55-56

¹University Core Curriculum substitute.
²Up to six hours in related areas may be substituted for Required Business Courses with the approval of the undergraduate committee.
³University Core Curriculum substitute (for Economics 113).

Open Studies Specialization Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
ENGL 101, 102	3	3	Science Group 1, 2.....	3	3
MATH (any except 107 or 114) ..	3	-	Foreign Language	4	4
SPCM 101.....	-	3	Social Science.....	3	3
MUS 104a,b.....	1	1	MUS 240	2	2
MUS 105a,b.....	3	3	Major Ensemble.....	1	1
MUS 140.....	2	2	Approved Elective Area.....	3	3
Major Ensemble	1	1			
MUS 102.....	2	-			
Health.....	-	2			
Total	15	15	Total	16	16
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
MUS 357a.....	3	-	Integrative Studies (UCC).....	3	-
Humanities Group 1, 2.....	3	3	Interdisciplinary (UCC)	-	3
MUS 357b.....	-	3	Approved Music Elective	3	6
Major Ensemble	1	1	Major Ensemble.....	1	1
Approved Music Elective	3	3	Approved Elective Area.....	9	3
Approved Elective.....	6	6	MUS 499.....	-	2
Total	16	16	Total	16	15

Music Business Specialization Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
ENGL 101, 102	3	3	Science Group 1, 2.....	3	3
MATH (any but 107 or 114).....	3	-	SPCM 101	3	-
MUS 102.....	-	2	Social Science.....	-	3
MUS 104a,b.....	1	1	ECON 240	3	-
MUS 105a,b.....	3	3	ACCT 220, 230.....	3	3
MUS 030a,b.....	1	1	MUS 240	2	2
MUS 140.....	2	2	MUS 032a or b	-	1
Major Ensemble	1	1	MUS 031a	1	-
MUS 174.....	-	3	Major Ensemble.....	1	1
			Health	-	2
Total	14	16	Total	16	15

THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
MUS 357a.....	3	-	Integrative Studies.....	3	-
Humanities Group 1, 2.....	3	3	Interdisciplinary.....	-	3
MUS 357b.....	-	3	MKTG 363.....	3	-
MKTG 304.....	3	-	MKTG 438.....	-	3
MUS 034.....	-	1	MKTG 401.....	3	-
MUS 240.....	2	-	Approved Music Elective.....	3	5
MGMT 304.....	-	3	Major Ensemble.....	1	1
Major Ensemble.....	1	1	MUS 499.....	-	3
MUS 033.....	1	-	MUS 035.....	1	-
MUS 316.....	-	1	MUS 036.....	-	1
Approved Music Elective.....	3	3	MUS 420.....	1	-
MUS 306.....	-	2			
<i>Total</i>	16	17	<i>Total</i>	15	16

Minor

The minor in music includes Music 102, 030a,b, 104a,b, 105a,b, 357a,b; two semesters of performing ensembles, two hours; and two semesters of 040 or 140, four hours for a total of 24 credits. Students must comply with the studio hour and recital requirements listed above. Students who wish to pursue the minor curriculum must make a declaration of their intent at the Music Advisement Office before registering for classes.

Music Faculty

Allison, Robert, Associate Professor, D.M.A., University of Illinois, 1988.

Barta, Michael, Professor, M.M., Franz Liszt Academy of Music (Hungary), 1977.

Barwick, Steven, Professor, *Emeritus*, Ph.D., Harvard University, 1949.

Bateman, Marianne Webb, Professor, M.Mus., University of Michigan, 1959.

Beattie, Donald, Associate Professor, M.Mus., University of Colorado, 1977.

Benyas, Edward, Assistant Professor, M.M., Northwestern University, 1994.

Best, Richard, Professor, Northwestern University.

Bottje, Will Gay, Professor, *Emeritus*, D.M.A., Eastman School of Music, 1955.

Breznikar, Joseph, Professor, M.Mus., University of Akron, 1977.

Brown, Philip, Assistant Professor, M.M.E., University of North Texas, 1983.

Delphin, Wilfred, Professor, D.M.A., University of Southern Mississippi, 1976.

Fink, Timothy, Assistant Professor, M.F.A., Southern Illinois University at Carbondale.

Fligel, Charles, Associate Professor, M.M., University of Kentucky, 1966.

Grizzell, Mary Jane, Assistant Professor, *Emerita*, M.Mus., Eastman School of Music, 1943.

Hanes, Michael, Professor, M.M.E., Southern Illinois University, 1965.

Hartline, Elisabeth, Assistant Professor, *Emerita*, M.Mus. Northwestern University, 1936.

House, Mary Elaine Wallace, Professor, *Emerita*, M.Mus., University of Illinois, 1954.

Hunt, C. B., Jr., Professor, *Emeritus*, Ph.D., University of California, Los Angeles, 1949.

Hussey, George, Professor, *Emeritus*, M.A.Ed., Washington University, 1963.

Mandat, Eric P., Professor, D.M.A., Eastman School of Music, 1986.

McHugh, Catherine, Professor, *Emerita*, Ed.D., Columbia University, 1959.

Mellado, Daniel, Associate Professor, Ph.D., Michigan State University, 1979.

Mochnick, John, Associate Professor, D.M.A., University of Cincinnati, 1978.

Mueller, Robert, Professor, *Emeritus*, Ph.D., Indiana University, 1954.

Olsson, Phillip, Professor, *Emeritus*, M.Mus., Chicago Conservatory, 1949.

Phillips, Dan, Associate Professor, M.M., University of Notre Dame, 1979.

Poulos, Helen, Associate Professor, *Emerita*, D.M., Indiana University, 1971.

Resnick, Robert, Professor, *Emeritus*, M.Mus., Wichita State University, 1949.

Romersa, Henry, Visiting Associate Professor, M.M.Ed., Oberlin College, 1955.

Roubos, Robert, Professor, D.M.A., University of Michigan, 1966.

Simmons, Margaret, Associate Professor, M.M., University of Illinois, 1976.

Stemper, Frank, Professor, Ph.D., University of California, 1981.

Taylor, Charles, Associate Professor, *Emeritus*, Ed.D., Columbia University, 1950.

Underwood, Jervis, Professor, *Emeritus*, Ph.D., North Texas State University, 1970.

Wagner, Jeanine, Associate Professor, D.M.A., University of Illinois, 1987.

Weiss, Robert L., Jr., Professor and Director, Ph.D., Southern Illinois University, 1984.

Werner, Kent, Associate Professor, *Emeritus*, Ph.D., University of Iowa, 1966.

Paralegal Studies for Legal Assistants (Major, Courses)

The program leads to the Bachelor of Science degree in paralegal studies for legal assistants. It prepares the graduate to function as a paraprofessional in the legal profession and as a legal assistant in private practice, legal aid offices, or the law-related operations of business, industry, education, or government.

In overall philosophy as well as in curriculum content and format, the paralegal studies for legal assistants program is based on the proposed *Curriculum for the Training of Law Office Personnel* as stated by the American Bar Association Special Committee on Legal Assistants. The program has two components: a core of legal specialty, administration, and communication skills courses to provide professional competency and a range of social science and humanities courses to provide the intellectual background for the student's future professional life including an understanding of law and its function in society. Students must meet a minimum 2.25 grade point average requirement for admission. Paralegal majors can satisfy the CoLA Writing-Across-the-Curriculum requirement by passing 300A and B.

Qualified students may be admitted to the Capstone option with a major in paralegal studies for legal assistants. The Capstone option is explained in Chapter 3.

Bachelor of Science Degree, College of Liberal Arts

University Core Curriculum	41
College of Liberal Arts Academic Requirements (See above)	11
Requirements for Major in Paralegal Studies for Legal Assistants	54
Paralegal Courses	27
Paralegal Studies for Legal Assistants 300a,b, 310, 320, 330, 350	18
Political Science 330 (general law)	3
Six hours selected from those listed below	6
Political science 334 (criminal law) or approved substitute	
Accounting 240 or 341 (income taxation)	
Accounting 441 (advanced taxation)	
Finance 270 (legal and social environment of business)	
Finance 320 (real estate)	
Finance 323 (real estate law)	
Finance 280 and 380 or approved substitute (business law)	
Paralegal Studies for Legal Assistants 340, internship. Students who take the internship will be required to work ten hours a week for one semester for each three hours of credit. A student may earn 12 hours of internship credit but not more than three will count toward the major.	
Administration Related Courses	9
Office Systems and Specialties 220	3
Accounting 210 or approved substitute	3
Computer Science 102, Information Management Systems 109, Office Systems and Specialties 114	3
Liberal Arts Courses	18
Two upper-division courses in one social science department and one humanities department. The remaining hours may be taken in either field. University Core Curriculum courses numbered 300 or above may be counted.	
Electives	14
Total	120

At least fifteen hours in paralegal courses must be taken at Southern Illinois University at Carbondale.

Paralegal Studies Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
ENGL 101, 102.....	3	3	Multicultural.....	3	-
Science.....	3	3	ACCT 210.....	-	3
POLS 114.....	3	-	Human Health.....	2	-
Humanities.....	3	3	POLS 330.....	-	3
Social Science.....	-	3	SPCM 101.....	3	-
Mathematics.....	3	-	Interdisciplinary ¹	-	3
Fine Arts.....	-	3	LAC 300 ¹ or 400.....	3	3
			OSS 220.....	-	3
			CS 102.....	3	-
Total.....	15	15	Total.....	14	15
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
PARL 300a,b.....	3	3	PARL 310.....	3	-
PARL 320.....	3	-	PARL 330.....	-	3
PARL 350.....	-	3	Law Elective ²	3	-
Foreign Language I,II.....	4	4	LAC 300 ¹ or 400.....	3	3
LAC 300 ¹ or 400.....	3	3	Free Elective.....	6	8
Law Elective ²	-	3			
Free Elective.....	3	-			
Total.....	16	16	Total.....	15	14

¹ For the purposes of this program core curriculum courses at the 300 level can be used to meet the 18 hour upper division liberal arts requirements.
² One of the law electives can be an internship.

Minor

A minor in paralegal studies for legal assistants requires 15 hours. Paralegal Studies for Legal Assistants 300a,b and Political Science 330 are required. The remaining six hours should be chosen from Paralegal Studies for Legal Assistants 310, 320, 330, 340 or 350.

Paralegal Studies for Legal Assistants Faculty

- Dibble, Elizabeth**, Lecturer, J.D., Southern Illinois University, 1983.

Hood, Howard, Lecturer, J.D., University of Illinois, 1968.

Hughes, Kenneth, Lecturer, J.D., Southern Illinois University, 1982.
- Lacey, Pamela**, Lecturer, J.D., Southern Illinois University, 1982.

Murray, Richard, Lecture, J. D., Southern Illinois University at Carbondale, 1982.

Smoot, Carolyn, Lecturer, J.D., Southern Illinois University at Carbondale, 1983.

Philosophy (Department, Major, Minor, Courses)

Philosophy is a critical, speculative, and reflective discipline concerned with the exploration of ideas. The questions with which it deals can be found in every human pursuit and subject matter. Among the subjects it embraces are the nature of truth and reality, the possibility of knowledge, the quest for moral values and political justice, and the nature of mind, language, art, and reason. The field of logic is a formal study of the art of exact thinking. Given this breadth, philosophy can be related to almost any subject or profession.

Recent studies have shown that strong liberal arts majors are in much demand in the world outside the University. While preprofessionals may enter the job market with higher salaries, those with liberal arts majors tend to rise higher in their professions. This is because a liberal arts degree indicates a capacity for thinking, learning, writing, and breadth of understanding. Philosophy is a strong liberal arts major, and majors in philosophy rank in the highest percentages for GRE, LSAT, and GMAT

scores. In addition to further academic work, philosophy contributes toward careers in law, medicine, business, government, journalism, religion, computers, and education.

The Department of Philosophy at SIUC is a pluralistic department, representing a variety of traditions, such as analytic philosophy, phenomenology, American philosophy, Asian philosophy, and feminism. It has faculty who specialize in the history of philosophy, logic, ethics, metaphysics, political and legal philosophy, the philosophy of science, the philosophy of technology, the philosophy of religion, and Islamic Studies. The undergraduate program is chartered by the national honor society in philosophy, *Phi Sigma Tau*.

The student electing to major in philosophy should consult the department's director of undergraduate studies. Early in the senior year, majors should contact a faculty member to direct the writing of the senior thesis. Philosophy majors will satisfy the College of Liberal Arts Writing-Across-the-Curriculum requirement by passing Philosophy 204, 205 and 399. A minor is not required for a major in philosophy, though it is recommended that the student take foreign languages such as Greek, Latin, French or German.

Bachelor of Arts Degree, College of Liberal Arts

University Core Curriculum Requirements	41
College of Liberal Arts Academic Requirements (See above.)	14
Requirements for Major in Philosophy	33
Logic requirement: Philosophy 105 or 320	3
Ethics requirement: Philosophy 104 or 340	3
History of Philosophy requirement: Philosophy 304 or 305	6
Six hours from 300 level courses in addition to 304 and 305 (not including courses offered in the Interdisciplinary Studies component of the University Core Curriculum).....	6
At least six hours of 400-level courses	6
Senior Thesis: Philosophy 499	3
Electives	<u>32</u>
Total	120

Minor

A minor in philosophy requires 15 hours, a maximum of 6 of which may be selected from philosophy courses offered in the University Core Curriculum and 6 of which must be selected from the courses listed above for the major. Philosophy 204 and 205 are recommended.

Honors

Honors in philosophy will be granted to eligible majors who maintain a 3.50 average in philosophy and a 3.00 overall average. To be eligible for Honors, the student's senior thesis must be read by two faculty members and the student must receive at least an A or a B.

Philosophy Faculty

Alexander, Thomas, Associate Professor, Ph.D., Emory University, 1984.	Eames, Elizabeth R., Professor, Emerita, Ph.D., Bryn Mawr College, 1951.
Black, Andrew, Assistant Professor, Ph.D., University of Massachusetts at Amherst, 1992.	Gaskill, Thomas E., Assistant Professor, Ph.D., Vanderbilt University, 1992.
Clarke, David S., Jr., Professor, Ph.D., Emory University, 1964.	Gatens-Robinson, Eugenie, Associate Professor, Ph.D., Southern Illinois University, 1984.
Diefenbeck, James A., Professor, Emeritus, Ph.D., Harvard University, 1950.	Gillan, Garth J., Professor, Ph.D., Duquesne University, 1966.

Hahn, Lewis E., Professor, *Emeritus*, and Editor of *Library of Living Philosophers*, Ph.D., University of California, 1939.

Hahn, Robert A., Associate Professor, Ph.D., Yale University, 1976.

Hickman, Larry A., Professor, Ph.D., University of Texas at Austin, 1971.

Howie, John, Professor and *Chair*, Ph.D., Boston University, 1965.

Kelly, Matthew J., Associate Professor, *Emeritus*, of Notre Dame, 1963.

Manfredi, Pat A., Assistant Professor, University of Notre Dame, 1982.

Plochmann, George Kimball, Professor, *Emeritus*, Ph.D., University of Chicago, 1950.

Schedler, George E., Professor, Ph.D., University of California at San Diego, 1973; J.D., Southern Illinois University, 1987.

Steinbock, Anthony J., Associate Professor, Ph.D., SUNY, Stony Brook, NY, 1993.

Summerfield, Donna M., Associate Professor, Ph.D., University of Notre Dame, 1984.

Tyman, Stephen, Associate Professor, University of Toronto, 1980.

Political Science (Department, Major, Courses)

The study of political science is concerned with predicting, explaining, and evaluating the political behavior, beliefs, laws, and organizational arrangements of people in a variety of settings. A major in political science provides rigorous social science training. A variety of courses afford a student an opportunity to study, in depth, individual and group behavior, political, administrative, and judicial processes, comparative national and subnational governmental systems, intergovernmental relations and conflict resolution, and normative and empirical political theory. The student who is interested in the public sector will find discussions of such topics as voting behavior, American foreign policy, and the decisions and opinions of Supreme Court justices to be challenging experiences.

A major in political science provides excellent training for the public service, scientific polling and political analysis, management training programs, and teaching, particularly at the secondary level. A political science major also provides an excellent foundation for professional graduate training in law, journalism, public administration or public affairs, as well as for graduate work in political science which is essential for a career in higher education. For the non-vocationally oriented student, political science is an excellent major for anyone with a keen interest in politics and public affairs.

A student planning to major in political science should consult with a faculty advisor of the department as early as possible in order to plan an orderly and coherent program. All members of the department are available for consultation on their academic specialties.

Students majoring in political science must take Political Science 114. Political Science 200, 213, 250, 270, and 378 are background courses for many advanced courses in the department. In fulfilling University Core Curriculum requirements or in choosing electives, political science majors should select courses from economics, psychology, sociology, anthropology, geography, and history. Mathematical or statistical training is highly recommended because of the emphasis on empirical research and analysis in political science. Such training will also enhance vocational opportunities. Depending on special interest, a student should also consider courses in foreign languages or computer science. Such courses are particularly important for the student who is planning to enter graduate school.

Students in political science must fulfill College of Liberal Arts Writing-Across-the-Curriculum (WAC) requirements. Political Science majors must receive a C or better in two of the three following courses containing writing across the discipline components: Political Science 200 (Introduction to the Discipline of Political Science: Scope); Political Science 300 (Introduction to the Discipline of Political Science: Methods); or Political Science 330 (Introduction to Legal Process). Students must also receive a C or better in an approved 400-level course. The research paper from the 400-level course must be submitted to the director of undergraduate studies by April 15 or November

15 of the student’s graduating semester as a final graduation requirement for the major in Political Science.

Qualified students are encouraged to inquire about individualized courses of study such as Political Science 390, 395, and 494. The interested student should contact the director of undergraduate studies or a member of the faculty.

At least fifteen of the required thirty-three credit hours for political science must be earned at Southern Illinois University at Carbondale. Majors are limited to a maximum of nine credit hours in Political Science 390, 395, and the Individualized Learning Program-ILP (a maximum of six hours in ILP). On-campus Political Science majors may not register for political science courses offered in ILP.

Bachelor of Arts, College of Liberal Arts

<i>University Core Curriculum Requirements</i>	41
<i>College of Liberal Arts Academic Requirements (See above.)</i>	14
<i>Requirements for Major in Political Science</i>	33

Political Science 114 or equivalent. Additional political science courses offered by the department must total 33 hours. Political Science 130 does not apply to hours for the political science major. Courses shall be distributed so that a minimum of one course is taken in 5 of the following 6 areas: scope, methods and political theory; American politics; public law; public administration; comparative politics; and international relations. Political Science 114 does not satisfy an area requirement. A minimum of three courses must be taken at the 400 level.

<i>Electives</i>	<u>32-38</u>
<i>Total</i>	120

Bachelor of Science Degree, College of Education

A major in political science for education requires 33 credit hours of work in the department. This work must be distributed among the subfields of the discipline in the same manner as the 33-hour requirement described above for the Bachelor of Arts degree.

Every student enrolled in this program should seek regular advisement in the Department of Political Science to ensure that department requirements will be fulfilled.

Students obtaining a Bachelor of Science degree in the College of Education must satisfy all requirements of that college. See Teacher Education Program. University Core Curriculum for teacher certification must include: English 101, 102 and 121 or 204; Speech Communication 101; Mathematics 110, 113 or approved substitute; Chemistry 106, Geology 110 or Physics 101; Plant Biology 117 or Zoology 115/Plant Biology 115; Plant Biology 301i, 303i or Zoology 312i; History 101a or non Western Civilization substitute; Art and Design 101, Music 103, History 201 or Theater 101; Political Science 114; Psychology 102; Anthropology 202, History 202, 210 or Sociology 215; Health Education 101 or Physical Education 101. Additional courses required for Teacher Certification: History 110 or 301 and one 3 hour elective from humanities. Professional education and other certification requirements may be found in the section of this catalog titled Curriculum and Instruction. All students enrolled in a teacher education program are required to take a special methods course. Since there is no methods course in political science, Curriculum and Instruction 469 is a required course for all students in this program. The course should be completed before student teaching. A student enrolled in the teacher education program is required to have a 2.50 grade point average in political science in order to be recommended for student teaching by the department. In fulfilling core curriculum education requirements or in choosing electives, a student must complete at least nine

semester hours in United States history or one of the following social science disciplines: geography, economics, sociology, or anthropology.

Minor

A minor in political science consists of 15 hours to be approved by the department adviser. At least nine of the required fifteen credit hours must be earned at Southern Illinois University at Carbondale.

¹Students completing a minor in political science for purposes of obtaining teacher certification in the State of Illinois must complete a minimum of 18 semester hours in the minor area.

Individualized Learning Program (ILP)

Students registered on-campus at the University will not receive credit toward their major requirements for Political Science courses completed in ILP. Off-campus students not registered for courses on campus may enroll in a maximum of two Political Science courses offered in ILP. Only one of these courses can be utilized to meet the department's 400-level requirement.

Research and Teaching

The faculty in the department come from a variety of academic institutions located in different parts of the country. Faculty research has received national recognition and quality of teaching is accorded a high priority. Virtually all political science courses are taught by full-time faculty. The department emphasizes small sections and a close student/faculty relationship.

Advisement

Students in political science have access both to the excellent advisement services in the College of Liberal Arts and to a faculty adviser in the department. Each student is assigned a political science professor to whom he or she can turn for academic counseling. Help is offered in course selection and registration, in long-range planning for the degree program and career information.

Awards

The department administers several endowed annual awards. Two are awarded competitively, one to the highest ranking junior in political science and one to the highest ranking senior in the major. Students may also qualify for membership in the national political science honor society. See the awards brochure and your adviser for additional information on eligibility requirements.

Honors Program

Students interested in the Political Science honors program should discuss this option with their departmental advisor at the beginning of the junior year. Opportunities available for this program are described in detail in the Political Science Handbook available in the department.

Political Science Faculty

Baker, John H., Associate Professor, Ph.D., Princeton University, 1961.

Bhattacharyya, Jnanabrota, Associate Professor, Ph.D., University of Delhi, 1969.

Brown, Barbara L., Lecturer, Ph.D., Southern Illinois University, 1985.

Chou, Ikua, Professor, *Emeritus*, Ph.D., Fletcher School of Law and Diplomacy, 1949.

Clinton, Robert, Associate Professor, Ph.D., University of Texas at Austin, 1985.

Collins, Susan, Assistant Professor, Ph.D., Boston College, 1995.

Dale, Richard, Associate Professor, Ph.D., Princeton University, 1962.
Derge, David Richard, Professor, Ph.D., Northwestern University, 1955.
Desai, Uday, Professor and *Chair*, Ph.D., University of Pittsburgh, 1973.
Ervin, Osbin L., Associate Professor, Ph.D., University of Tennessee, 1974.
Foster, John L., Associate Professor, Ph.D., University of Minnesota, 1971.
Garner, William R., Associate Professor, *Emeritus*, Ph.D., Tulane University, 1963.
Hamman, John A., Associate Professor, and *Director*, Ph.D., University of Illinois, 1988.
Hays, Scott, Assistant Professor, Ph.D., Florida State University, 1991.
Jackson, John S., III, Professor, *Dean*, Ph.D., Vanderbilt University, 1971.
Kamarasy, Egon K., Assistant Professor, *Emeritus*, Doctor Politics, Budapest University, Hungary, 1942.
Kenney, David, Professor, *Emeritus*, Ph.D., University of Illinois, 1952.
Klingberg, Frank L., Professor, *Emeritus*, Ph.D., University of Chicago, 1938.

Landecker, Manfred, Associate Professor, *Emeritus*, Ph.D., Johns Hopkins University, 1965.
Mason, Ronald M., Associate Professor, Ph.D., University of Iowa, 1976.
Melone, Albert, Professor, Ph.D., University of Iowa, 1972.
Miller, Roy E., Associate Professor, Ph.D., University of Illinois, 1971.
Morton, Ward M., Professor, *Emeritus*, Ph.D., University of Texas, 1941.
Nelson, Randall H., Professor, *Emeritus*, Ph.D., University of Michigan, 1956.
Schubert, Glendon, Research Professor, *Emeritus*, Ph.D., Syracuse University, 1948.
Snavely, Keith, Associate Professor, and *Director*, Ph.D., University of California at Davis, 1984.
Somit, Albert, Distinguished Service Professor, *Emeritus*, Ph.D., University of Chicago, 1947.
Tarry, Scott, Assistant Professor, Ph.D., University of Michigan, 1993.
Turley, William S., Professor, Ph.D., University of Washington, 1972.

Psychology (Department, Major, Minor, Courses)

The undergraduate program in psychology provides a broad general education in the tradition of the liberal arts. This tradition focuses on the development of wide-ranging interests in the arts, humanities, and social sciences, and on the development of critical and analytical thinking. A student who has earned a degree in one of the liberal arts, such as psychology, should be prepared to pursue lifelong learning and personal enrichment, as well as to enter the work force or to pursue more advanced studies.

Graduates of the psychology program who have entered the work force immediately have found employment in a wide variety of settings, ranging from sales and personnel work in the business sector, to positions with the human service agencies of local, state, and federal governments. Graduates who have gone on to advanced study have successfully prepared themselves for professional careers in such fields as law, medicine, and psychology.

Students planning to apply to law or medical schools after completing a major in psychology should plan their programs of study in close consultation with the pre-medical or pre-law advisers on campus. Students planning to apply for admission to graduate study in psychology should plan their undergraduate program of study very carefully in consultation with advisers in the Department of Psychology. At least two years, and as many as six years, of graduate study are required for qualification as a professional psychologist, and admission to the graduate programs is highly selective and competitive.

Students who enter the University with a major in psychology should meet with the director of undergraduate studies in the Department of Psychology as soon as possible after arrival at the University in order to discuss their interests and plans of study. Students already at the University who wish to change to a major in psychology should contact the office of the director of undergraduate studies in the Department of Psychology in order to initiate the request for a change of major.

Bachelor of Arts Degree, College of Liberal Arts

University Core Curriculum Requirements	41
College of Liberal Arts Academic Requirements (See above)	14
Requirements for Major in Psychology	37-40
Psychology 102 (must be passed with a grade of C or better)	(3)
Mathematics 108, 111, or 139 (choose one)	(3) + 0-2
Psychology 211, 212 (must be passed with a grade of C or better, completion before senior year recommended)	8
Psychology Electives	29-30
Ten courses from the list below. At least six must be from Groups A, B, and C, with at least one course from each of these three groups. A minimum of three courses must be chosen at the 400-level from among the total offerings in the A, B, and C Groups.	
Group A: 301, 303, 304, 305, 307, 333, 431, 432, 440, 451, 461, 463, 464	
Group B: 302, 308, 309, 310, 371, 407, 409, 415, 416, 419, 445	
Group C: 320, 322, 323, 340, 411, 413, 420, 421, 441, 465	
Group D: 222, 389, 391, 392, 393, 394, 489, 499, Educational Psychology 402, Mathematics 282	
Of all credits that a student completes for Psychology 391, 392, 393, and 394, a maximum of three hours from any or all of these courses may count towards the major.	
Electives	25-34
Total	120

¹Courses in parenthesis will also count towards the 41 hours of University Core Curriculum requirements.

Psychology Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
Core Curriculum.....	15	12	Core Curriculum	6	5
PSYC 102.....	-	3 ¹	MATH 108 or 139.....	-	3
			PSYC Electives.....	3	3
			Elective	6	4
Total	15	15	Total	15	15
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
PSYC 211,212.....	4	4	PSYC 400-Level	6	3
PSYC Electives	6	3	PSYC Electives.....	3	3
Electives	5	8	Electives.....	6	9
Total	15	15	Total	15	15

¹ Satisfies Core Curriculum Social Science requirement

Minor

A minor in psychology requires the successful completion of at least 15 semester hours (5 courses) in courses offered by the Department of Psychology and acceptable to the department for fulfillment of major requirements. Psychology 393 may not be included. A maximum of three hours from any or all Psychology 391, 392 and 394 may count towards the minor. Courses in other departments, such as the Department of Educational Psychology, do not fulfill minor requirements. An average gpa of at least 2.0 in psychology courses must be successfully completed. Students completing a minor in psychology for purposes of qualifying to teach psychology in the State of Illinois must complete a minimum of 20 semester hours in psychology.

A student wishing to complete a minor in psychology must apply to the Department of Psychology for approval of the program of study for the minor. Without this approval the minor will not be officially listed on the student's transcript at the time of graduation. Application forms are available in the office of the director of undergraduate studies in psychology.

Courses taken at other institutions may count towards the minor only if those courses are acceptable for transfer credit in psychology. If credit is not accepted for transfer, a revised application for the minor must be approved.

Transfer Credit

Credit for a course in psychology successfully completed at another accredited institution will be transferred to meet major or minor requirements in psychology at SIUC, subject to the following conditions:

1. The course number must bear a departmental prefix clearly indicating the course is a psychology course. Examples are *PSYCH* and *PSYC*.
2. The course must have covered substantially the same content material as a course currently offered at SIUC to meet major requirements.
3. Credit for a course completed at a community or junior college is not transferable if the corresponding course at SIUC is offered at the 400-level.
4. A grade of C or higher must have been earned in the course.
5. All transfers of credit to meet major or minor requirements in psychology must be explicitly approved by the department of psychology.

Courses from other institutions that do not meet these conditions may still be acceptable for elective credit to meet general university requirements. Students should consult their departmental or college adviser about such courses.

Senior Honors Program

A small number of students is selected each year for the honors program. Selection criteria are promising academic performance (3.0 overall grade point average and 3.25 psychology grade point average minimum), expressed interest, recommendation by departmental adviser, and capacity of program to take new students. Emphasis is on small seminar and individual research work by the student.

Psychology Faculty

Berenbaum, Sheri A., Professor, Ph.D., University of California-Berkeley, 1977.

Brutten, Gene J., Professor, *Emeritus*, Ph.D., University of Illinois, 1957.

Buck, Terence D., Associate Professor, Ph.D., University of Missouri, 1968.

Carrier, Neil A., Professor, *Emeritus*, Ph.D., University of Michigan, 1956.

Chwalisz, Kathleen D., Assistant Professor, Ph.D., University of Iowa, 1992.

Dollinger, Stephanie M. Clancy, Associate Professor, Ph.D., Syracuse University, 1989.

Corcoran, Kevin J., Associate Professor, Ph.D., University of Connecticut, 1984.

DiLalla, David Louis, Associate Professor, Ph.D., University of Virginia, 1989.

DiLalla, Lisabeth F., Assistant Professor, Ph.D., University of Virginia, 1987.

Dillon, Ronna, Professor, Ph.D., University of California, Riverside, 1978.

Dollinger, Stephen J., Professor, Ph.D., University of Missouri-Columbia, 1977.

Dunagan, Shirley S., Instructor, *Emerita*, M.S., University of Tennessee, 1954.

Ehrenfreund, David, Professor, *Emeritus*, Ph.D., State University of Iowa, 1947.

Gannon, Linda, Professor, Ph.D., University of Wisconsin, 1975.

Gilbert, Brenda O., Assistant Professor, Ph.D., University of Florida, 1985.

Gilbert, David G., Associate Professor, Ph.D., Florida State University, 1978.

Glidden-Tracey, Cynthia E., Assistant Professor, Ph.D., University of Illinois, 1987.

Graham, Jack W., Professor, *Emeritus*, Ph.D., Purdue University, 1951.

Guthrie, Robert V., Professor, Ph.D., U.S. International University, 1970.

Hetherington, John D., Assistant Professor, Ph.D., University of Arizona, 1992.

Jensen, Robert A., Associate Professor, Ph.D., Northern Illinois University, 1976.

Kelley, Noble H., Professor, *Emeritus*, Ph.D., State University of Iowa, 1936.

Labott, Susan M., Assistant Professor, Ph.D., Northern Illinois University, 1986.

Lit, Alfred, Professor, *Emeritus*, Ph.D., Columbia University, 1948.

McHose, James H., Professor, Ph.D., University of Iowa, 1961.

McKillip, John A., Professor, Ph.D., Loyola University of Chicago, 1974.

Meltzer, Donald, Professor, Ph.D., University of Pittsburgh, 1963.

Mitchell, Thomas O., Associate Professor, *Emeritus*, Ph.D., University of Colorado, 1969.

Molfese, Dennis L., Professor, Ph.D., Pennsylvania State University, 1972.
Molfese, Victoria J., Professor, Ph.D., Pennsylvania State University, 1974.
O'Donnell, James P., Associate Professor, Ph.D., University of Pittsburgh, 1965.
Pitz, Gordon F., Professor, Ph.D., Carnegie-Mellon University, 1963.
Purcell, Thomas D., Associate Professor, Ph.D., Southern Illinois University, 1965.
Radtko, Robert C., Associate Professor, Ph.D., State University of Iowa, 1963.
Ramanaiah, Nerella, Professor, Ph.D., University of Oregon, 1971.
Ringuette, Eugene L., Associate Professor, *Emeritus*, Ph.D., Purdue University, 1963.
Schill, Thomas R., Professor, Ph.D., Oklahoma State University, 1963.
Schmeck, Ronald R., Professor, Ph.D., Ohio University, 1969.
Shea, Sandra, Assistant Professor, Ph.D., Vanderbilt University, 1980.

Shoemaker, Donald J., Professor, *Emeritus*, Ph.D., Ohio State University, 1955.
Smith, Douglas C., Associate Professor, Ph.D., Kansas State University, 1977.
Snyder, John F., Associate Professor, Ph.D., Loyola University, 1965.
Stockdale, Margaret S., Associate Professor, Ph.D., Kansas State University, 1990.
Swanson, Jane L., Assistant Professor, Ph.D., University of Minnesota, 1986.
Taub, Diane E., Associate Professor, Ph.D., University of Kentucky, 1986.
Tinsley, Howard E. A., Professor, Ph.D., University of Minnesota, 1971.
Vaux, Alan C., Professor and *Chair*, Ph.D., Trinity College, Ireland, 1979; Ph.D., University of California at Irvine, 1980.
Westberg, William C., Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1948.
Wendt, Rachel, Assistant Professor, *Emerita*, Ph.D., Southern Illinois University, 1966.
Yanico, Barbara, Associate Professor, Ph.D., Ohio State University, 1977.

Sociology (Department, Major, Minor, Courses)

Sociology is the science of society. It explains how human groups, institutions, and social movements shape our lives. Sociology develops students' insights into theoretical and practical aspects of life. Sociology students study such topics as social thought, sex and gender roles, marriage and the family, social problems, criminology, large-scale business and government organizations, international development, and social change.

Training in sociology is basic both to creative living and to such practical tasks as the development and effective working of businesses, families, community service agencies, political movements and parties, churches, social clubs, government, industry, and schools.

Those with degrees in sociology find meaningful and rewarding employment as consultants to business and government, social change agents (e.g., community organizers), politicians, educators, and diplomats. Like other liberal arts students, sociology majors also enter the business world, particularly in the sales or personnel divisions of major corporations.

An undergraduate major in sociology is excellent preparation for those anticipating graduate study in law, social welfare, business administration, journalism, and many of the technical and scientific fields. In addition, many students have enjoyed the benefits of double majors or major-minor combinations between sociology and one of these related fields. Sociology and paralegal studies for legal assistants is an example of double majors involving two programs that are both in the College of Liberal Arts, while sociology and journalism are double majors involving programs in the College of Liberal Arts and the College of Communications and Fine Arts.

The Department of Sociology offers the two following alternative plans of study for completion of its major.

General Sociology Plan. This plan is for students seeking a broad academic background in sociology. It usually is chosen either by those who want a general liberal arts education in the social sciences or those anticipating graduate study in one of the social sciences.

Applied Sociology Plan. This plan combines general study in sociology in individually planned programs built around applied courses, including field work/internship experience. The applied sociology plan is primarily for those who seek careers in governmental, business, or community service occupations for which graduate school training either is unnecessary or taken as an option somewhat later in one's career. Both the general and applied plans provide maximum flexibility in course selection by students, while still ensuring that all majors receive training in the fundamentals of the field. Such flexibility enables students to tailor either their general or applied plan to specific career goals.

Academic Advisement. A student planning to major or minor in sociology should consult the department's director of undergraduate studies as early as possible in order to plan an integrated program. After the petition to major in sociology has been approved, the student will be expected to visit the director each semester until all major requirements have been completed. A record of progress for each student will be on file in the department.

To graduate with a major in sociology the student must meet all the University Core Curriculum requirements of the University and the requirements of the College of Liberal Arts. The major requires thirty-four hours of course work. Twelve hours are in sociology core requirements: Sociology 301, 308 and 312. An additional four hours of senior year experience also is required: Sociology 497 or 498. The remaining eighteen hours for the major must include at least eight hours at the 400 level and may be elected from regularly scheduled departmental courses. These requirements are summarized below.

Transfer Students. Credits for some sociology courses taken at community colleges are transferable. Students should have their sociology credits evaluated by the department's director of undergraduate studies at the earliest opportunity. At least 20 hours of sociology credit must be earned at Southern Illinois University at Carbondale. The eight hours of 400-level courses must be earned at a senior level institution and Sociology 497 or 498 must be taken at Southern Illinois University at Carbondale.

Bachelor of Arts Degree, College of Liberal Arts

<i>University Core Curriculum Requirements</i>	41
<i>College of Liberal Arts Academic Requirements (See above)</i>	14
<i>Requirements for Major in Sociology</i>	34
1) Sociology Core Requirements: Sociology 301, 308 and 312	
2) Senior Year Work: Sociology 497 (General Sociology Plan) or Sociology 498 (Applied Sociology Plan)	
3) At least eight hours must be earned in sociology 400-level courses	
<i>Electives</i>	31
<i>Total</i>	120

Minor

A minor in sociology consists of a minimum of 16 hours of which four must be Sociology 301 and at least six more hours from 300- or 400-level courses at SIUC.

Honors Program

The department offers an honors program for academically outstanding sociology majors. Qualifications for acceptance into this program are: (1) an overall grade point average of at least 3.00; and (2) completion of 8 hours in sociology courses with a

grade point average of at least 3.25 in all sociology courses taken at Southern Illinois University at Carbondale, and the completion of no fewer than six, nor more than fourteen, semester hours in research or independent study which are counted toward the major. Successful completion of the department's honors program is noted on the academic record at the time the degree is recorded and on the diploma, i.e., Departmental Honors in Sociology. For details, qualified students interested in this program should consult the department's director of undergraduate studies.

Sociology Faculty

Alix, Ernest K., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1966.

Best, Joel, Professor and *Chair*, Ph.D., University of California- Berkeley, 1971.

Blinde, Elaine M., Associate Professor, Ph.D., University of Illinois, 1987.

Burger, Thomas, Associate Professor, Ph.D., Duke University, 1972.

Eynon, Thomas G., Professor, Ph.D., Ohio State University, 1959.

Hendrix, Lewellyn, Associate Professor, Ph.D., Princeton University, 1974.

Hope, Keith, Professor, Ph.D., Oxford University, 1963.

Matsuo, Hisako, Assistant Professor, Ph.D., University of California at Riverside, 1994.

Nall, Frank C., II, Associate Professor, *Emeritus*, Ph.D., Michigan State University, 1959.

Patterson, Edgar I., Assistant Professor, M.A., University of Kansas, 1961.

Pryor, Doug, Assistant Professor, Ph.D., Indiana University, 1994.

Schneider, Mark A., Assistant Professor, Ph.D., Yale University, 1985.

Taub, Diane E., Associate Professor, Ph.D., University of Kentucky, 1986.

Ward, Kathryn B., Professor, Ph.D., University of Iowa, 1982.

Williams, Rhys H., Associate Professor, Ph.D., University of Massachusetts at Amherst, 1988.

Speech Communication (Department, Major, Courses)

The Department of Speech Communication offers courses in the history, theory and application of communication. These courses reflect the liberal arts and social science tradition as an approach to theory and application.

The department also sponsors co-curricular activities in debate, forensics, performance studies (oral interpretation), and public relations, all of which are open to non-majors.

English is the language of instruction in the Department of Speech Communication and proficiency in written and oral English is required of all students in Speech Communication. To meet the requirements for a major in the Department of Speech Communication a student must demonstrate the following basic skills: the ability to deliver effective public speeches and oral performances of literature; the ability to write clear, correct English prose; the ability to communicate effectively at the interpersonal level as well as in small and large groups; and the ability to understand and apply theory and research which are relevant to the student's program specialization.

These communication competencies may be demonstrated by completing the major program and any one of the specializations described below and by receiving no lower than a C grade in courses listed in the required core and as required in the student's chosen specialization. Under certain circumstances, a student may elect to demonstrate a competency by passing a proficiency examination administered by the Department of Speech Communication.

Bachelor of Science Degree, College of Liberal Arts

SPEECH COMMUNICATION MAJOR

<i>University Core Curriculum Requirements</i>	41
<i>College of Liberal Arts Academic Requirements (See above)</i>	11-17

Includes: one year of foreign language, one science course beyond University Core Curriculum and two writing intensive courses chosen from those listed in the required curriculum specializations below.	
Requirements for Major in Speech Communication	42
Required Core Courses	9
Communication theory: 230	
Communication skills: 3 hours of public communication selected from 221, 325, 326 or 370; and 3 hours of interpersonal communication selected from 261, 262, 371 or 383.	
Required Curriculum Specialization (see below)	33
Interpersonal Communication Specialization	33
For students interested in topics of communication in interpersonal relationships, language in everyday interactions, group communication dynamics, and non-verbal and intercultural aspects of communication; and careers in communication skills training, interviewing, communication research, conflict management, and employee or client relations.	
Required: 261, 262, 361, 383, 442, 461; and 15 hours selected from 280, 340, 341, 362, 371, 382, 401, 440, 441, 443, 444, 446, 452, 460, 462, 465, 480 or 483.	
Performance Studies Specialization	33
For students interested in theatrical and everyday performance and the oral interpretation of literature, and in careers in performance, writing-as-performance, and public presentation from business to the arts.	
Required: 370, 371, 471, 472; 6 hours selected from 474, 475, 476; at least one hour selected from 390 or 490; and 15 hours selected from 221, 310, 325, 326, 341, 361, 383, 401, 411, 421(3), 431, 432, 433, 435 or 461.	
Persuasive Communication Specialization	33
For students interested in public and political discourse, argumentation, rhetoric, social influence and media; careers in law, politics, sales, corporate and public advocacy, and selected areas in business and mass media.	
Required: 221, 325, 326, 358, 411, 421(3), 442; 12 hours selected from 280, 281, 310, 341, 361, 362, 371, 382, 401, 421(3,3), 440, 441, 443, 446, 451, 452, 465 or 476.	
Organizational Communication Specialization.....	33
For students interested in a broad spectrum of communication topics in the context of the organization including, but not limited to, compliance-gaining, superior-subordinate interaction, communication audit methods, organizational networks, organizational climate and culture, conflict resolution, impact of new communication technology, and information flow.	
Required: 280, 281, 326, 383, 441, 480, 483; 12 hours selected from 221, 261, 262, 341, 361, 381, 382, 390, 411, 442, 452, 481, 490.	
Public Relations Specialization	33
For students interested in social influence and change through diverse media; and careers in agency, corporate or not-for-profit public relations.	

Required: 280, 281, 326, 381, 382, 481, Journalism 309 and 310, Art and Design 497d or Journalism 315, and 6 hours selected from 390, 490, 493 or 494.

Electives	26
Professional Requirements and Advisement:	
1. Electives <i>cannot</i> be professional communication courses; professional communication includes journalism, graphics, cinema and photography, organizational communication, and radio and television.	
2. Students interested in agency or corporate public relations are also advised to select 15 hours of electives from the College of Business and Administration. Recommended courses are Management 304, Marketing 304, 305 and 363.	
Total	120

Speech Communication Faculty

Breniman, Lester R., Associate Professor, Emeritus, Ph.D., Ohio State University, 1953.	Lanigan, Richard L., Professor, Ph.D., Southern Illinois University, 1969.
Crow, Bryan, Associate Professor, Ph.D., University of Iowa, 1982.	McOmber, James, Assistant Professor, Ph.D., University of Iowa, 1991.
Daughton, Suzanne, Assistant Professor, Ph.D., University of Texas at Austin, 1991.	Pace, Thomas J., Professor, Emeritus, Ph.D., University of Denver, 1957.
Ekachai, Daradirek, Assistant Professor, Ph.D., Southern Illinois University, 1991.	Parkinson, Michael G., Associate Professor, A.P.R., Ph.D., University of Oklahoma, 1978.
Glenn, Phillip, Associate Professor, Ph.D., University of Texas at Austin, 1987.	Pelias, Ronald J., Professor, Ph.D., University of Illinois, 1979.
Goodiel, Eunice B., Assistant Professor, Emerita, M.A., Northwestern University, 1941.	Pineau, Elyse, Associate Professor, Ph.D., Northwestern University, 1990.
Higgerson, Mary Lou, Professor, Ph.D., University of Kansas, 1974.	Potter, David J., Professor, Emeritus, Ph.D., Columbia University, 1943.
Hinchcliff-Pelias, Mary, Associate Professor, Ph.D., Southern Illinois University, 1982.	Smith, William D., Associate Professor, Emeritus, Ph.D., Southern Illinois University, 1964.
Kleinau, Marion L., Professor, Emerita, Ph.D., University of Wisconsin, 1961.	Stucky, Nathan, Associate Professor, Ph.D., University of Texas at Austin, 1988.
Kleinau, Marvin D., Associate Professor, Emeritus, Ph.D., Southern Illinois University, 1977.	VanOosting, James, Professor and Chair, Ph.D., Northwestern University, 1980.
Langsdorf, L., Professor, Ph.D., SUNY at Stony Brook, 1977.	Wiley, Raymond D., Assistant Professor, Emeritus, M.S., Southern Illinois University, 1965.

Theater (Department, Major, Minor, Courses)

The Bachelor of Arts degree in Theater is designed to provide the student with broad-based exposure to human experience and sound foundation in basic skills of theater craft. The undergraduate theater major provides the student with invaluable interpersonal and intrapersonal skills and builds inquiring and open minds—qualities required in most professions the student might wish to pursue after graduation—and further offers essential education and training for continued work in graduate or professional schools.

The extensive production schedule in two theaters—a proscenium house, the McLeod Theater, seating about 488, and a flexible Laboratory Theater, seating about 100—provides training in all aspects of theater, augmented by courses in acting, voice, movement, directing, playwriting, production design, and technical theater. The production schedule is extensive enough to allow students the opportunity to design sets, lights, and costumes and to write, perform, and direct for productions bridging all dramatic genres, including musical theater.

In addition to the University Core Curriculum requirements, all theater majors must complete a theater core curriculum of 27 semester hours, all of which must be completed with a grade of C or better; a liberal arts component of 20 hours, selected by advisement from courses outside the Department of Theater; and 33 hours of theater electives, to include at least 9 hours at the 400 level. These 33 hours may include a minor of 15 hours in such complementary fields as art, clothing and textiles, computer science, English, foreign languages, history, journalism, music, philosophy, psychology, recreation, sociology, and speech communication.

Theater course credit earned at other institutions of higher learning, not used for University Core Curriculum requirements at the time of transfer, can be applied to the Bachelor of Arts degree program with the approval of the faculty of the Department of Theater.

Bachelor of Arts Degree, College of Liberal Arts

<i>University Core Curriculum Requirements</i>	41
Must include Theater 101.	
<i>Requirements for Major in Theater</i>	80
Theater Core Curriculum	27
Theater 205, 218a, 218b or c, 217, 300, 311a, 354a,b, 402a	
Liberal Arts Component (by advisement)	20
Theater Electives (minimum of 9 semester hours at the 400 level)	33
Students interested in acting might elect: Theater 203, 303a, 303b, 317a, 317b, 350, 402b, 403 or 417	
Students interested in design/technical might elect: Theater 218b or c, 350, 407, 408, 409, 414, 418 or 419	
<i>Total</i>	121

Minor

<i>Requirements for Minor in Theater</i>	16
A minor in theater consists of Theater 311a, with Theater 101 as a prerequisite, Theater 354a or b, 218a,b or c, 217 and 323-1.	

Theater Faculty

Barnes-McLain Noreen , Associate Professor, Ph.D., Tufts University, 1986.	Moe, Christian H. , Professor, <i>Emeritus</i> , Ph.D., Cornell University, 1958.
Blackstone, Sarah J. , Associate Professor and Chair, Ph.D., Northwestern University, 1983.	Naversen, Ronald , Associate Professor, Ph.D., Southern Illinois University, 1990.
Chrestopoulos, Alexander , Assistant Professor, M.F.A., University of Arizona, 1979.	Stewart-Harrison, Eelin , Professor, <i>Emerita</i> , Ph.D., Louisiana State University, 1968.
Krasner, David , Assistant Professor, Ph.D., Tufts University, 1996.	Straumanis, Alfreds , Professor, <i>Emeritus</i> , Ph.D., Carnegie Institute of Technology, 1966.
Merrill-Fink, Lori , Associate Professor, M.F.A., University of Arizona, 1988.	Varnes, Mark , Assistant Professor, M.F.A., University of Missouri-Kansas City, 1990.

University Studies (Program)

The University Studies program allows students to design interdisciplinary program of study leading to a Bachelor of Science or Bachelor of Arts degree. The Bachelor of Arts degree requires one full year of college-level foreign language; the Bachelor of Science degree does not. Students must also take one science course with lab in addition to the University Core Curriculum science requirement, one course in English composition in addition to the University Core Curriculum composition requirement

and one writing intensive course designated by a College of Liberal Arts department as fulfilling the Writing-Across-the-Curriculum requirement.

To be admitted to the University Studies degree program, a student must meet the following criteria.

1. Have passed no more than 90 semester hours.
2. Have completed at least one full year of college course work (a minimum of 24 semester hours) with a 2.00 grade point average or higher.
3. Have exceeded none of the limitations prescribed by the program.

Although University Studies imposes few specific requirements for the degree, other than those which are University-wide baccalaureate requirements, there are limitations on the selection of course work. In addition, students must achieve a minimum grade point average of 2.00 for the 40 semester hours of 300-400 level course work (including 300-level University Core Curriculum courses).

Bachelor of Arts Degree

<i>University Core Curriculum Requirements</i>	41 ¹
<i>Requirements for University Studies</i>	79 ²
Foreign language	8
English Composition	3
Writing Intensive course	3
Science with lab	3
300-400 level coursework	40
Other courses approved by the chief academic advisor in the College of Liberal Arts.	22
Total	120

Bachelor of Science Degree

<i>University Core Curriculum Requirements</i>	41
<i>Requirements for University Studies</i>	79 ¹
English Composition	3
Writing intensive course	3
Science with lab	3
300-400 level coursework	40
Other courses approved by the chief academic advisor in the College of Liberal Arts	30
Total	120

¹Two limitations are placed on course distribution:

a. Students may take no more than 40 semester hours excluding courses used to satisfy University Core Curriculum requirements, in any College (or the School of Social Work), except for the College of Liberal Arts where they may take up to 54 hours (but no more than 27 semester hours in the social sciences, humanities, or fine and performing arts)

b. Students may take no more than 20 semester hours excluding courses used to satisfy University Core Curriculum requirements, in a department or in a School within a College).

College of Mass Communication and Media Arts

Joe S. Foote, *Dean*

Departments: Cinema and Photography; Radio-Television

Schools: Journalism

The College of Mass Communication and Media Arts offers the Bachelor of Arts degree in Cinema and Photography, and Radio-Television. The Bachelor of Science degree is awarded in Journalism.

Students in the college are required to complete three core courses dealing with basic concepts. The three courses - Mass Communication and Media Arts 201, *Media in Society*; 202, *Visual Literacy*; and 203, *Critical Thinking Through Media Writing* provide a common experience and conceptual framework for college majors.

Admission to the University is handled through the Office of Admissions and Records, but those students who desire more specific information about a major should make an appointment with an academic adviser of that department or school. Each department or school of the college has one or more individuals who will advise prospective students about major requirements, curriculum, activities, careers, and opportunities. Transfer students may also discuss transfer credit and placement in courses at Southern Illinois University at Carbondale.

Students who wish to explore any or all of the academic majors in the college may apply for admission as an undecided major in Mass Communication and Media Arts. This gives the student access to any of the beginning courses in cinema, photography, journalism, radio or television as well as to the required core courses in Mass Communication and Media Arts.

Faculty of the college are engaged in research/creative activities concerning mass communication and the media arts. They also provide consulting service and other community services to schools, newspapers, radio and television stations, museums, businesses, and governments. They hold professional memberships and serve as officers in various local, state, national, and international organizations in the mass communication and media arts. A number of special events are presented each year, including lectures by noted artists and media professionals, photography exhibits, and film showings.

The Broadcasting Service is also part of the college. The Broadcasting Service operates WSIU (FM), a public radio station, and WSIU (TV), channel 8, a public television station, both located in Carbondale. It also operates a second public television station, WUSI (TV), channel 16, at Olney.

Administrative offices of the college are located in the Communication Building, which includes the broadcasting facilities, film production facilities, and office of the *Daily Egyptian*.

Cinema and Photography (Department, Major, Courses)

The major in cinema and photography provides undergraduate students with experience and background in the history, theory, and practice of cinematic and photographic communication and expression. The program is structured to make available a foundation for professional, fine arts, and educational careers in cinema and photography; to explore the social, critical, and ideological implications of still and motion pictures; and to provide opportunities for study of and experimentation with both cinema and photography as media for communication and personal expression.

The major requires a minimum of 38 hours in cinema and photography coursework, including the required courses in the department. Students may tailor course-

work selection to meet specific areas of emphasis: cinema production, cinema studies, fine arts photography, professional photography. Course work in electronic imaging is also available.

Students are urged to declare their major as soon as possible. To be admitted to the major, a student must have a grade point average of C or better. In order to remain in the major, each student must maintain an overall grade point average of at least a C and at least a C average for all cinema and photography coursework. Grades below C in cinema and photography courses will not be accepted as fulfilling minimum major requirements. Cinema and photography courses in which students have received grades of D, F, AU, or INC may not be used to satisfy prerequisite requirements for other cinema and photography courses.

Courses in cinema and photography have limited enrollment, especially advanced courses. Not all courses are offered each semester. Admission to certain cinema and photography courses is restricted, and permission must be obtained prior to registration. Permission to register for some courses is based upon submission of photographic portfolios or films. Students are encouraged to plan their course scheduling well in advance to ensure necessary prerequisites and fulfillment of major requirements.

Students may design their own programs of study within the requirements for graduation. The department recommends that students choose an area of emphasis to give a sense of direction to their studies. Students interested in cinema production are encouraged to enroll in 349, 355, 356, 360, 368, 452, 455 and 456, 470b, 472, and nine hours of cinema history courses; cinema studies, 349, 355, 356, 360, 368, 449, 462, 463, 466, 467, 470a, and 499b; fine arts photography, 310, 311, 320, 322, 401, 402, 420, 421, 422, 425, 426, 470c and 471; professional photography, 310, 311, 320, 322, 401, 402, 404, 405, 406, 407 and 408; photojournalism, 310, 311, 320, 322, 407, 408 and Journalism 300, 310, and 311.

Cinema and Photography 498 or 499 or an equivalent is required of all majors who have not completed 320 and 322 and optional for others. This senior thesis will consist of the preparation of a film, screenplay, research or critical paper under the supervision of a cinema and photography faculty member. A copy of the thesis is to be provided for the department by the student.

Students provide photographic materials for all cinema and photography production courses. In still photography production courses, students supply their own film, photographic paper, certain specialized chemicals, and a fully adjustable 35mm or 120 roll film camera. Some students have found that owning additional items of equipment is advantageous. A fee for laboratory materials is charged for each still photography production course in which the student enrolls. In cinema production courses, students provide their own film, processing, recording materials, and editing supplies. In courses which involve the screening of a number of films, there is a \$10 screening fee, and many cinema courses have an equipment usage fee.

The University reserves the right to retain examples of the work of each student in each photography class, to make and retain prints of all films made as part of course work other than thesis, and to retain copies of student papers. Such photographs, films, or papers become part of a permanent departmental collection.

No more than nine hours from a combination of the following courses may count toward the first 38 hours in the cinema and photography major: 491, 495, 497.

Electives, required for the major in cinema and photography, are defined as coursework outside the minimal University Core Curriculum Requirements and not offered for major credit in the department. There is no required minor.

Bachelor of Arts Degree, College of Mass Communication and Media Arts

<i>University Core Curriculum Requirements</i>	41
<i>Mass Communication and Media Arts College Requirements</i>	9

Mass Communication and Media Arts 201, 202, 203	
Requirements for Major in Cinema and Photography	38-54
Either Cinema and Photography 310 and 311 or 360 and 368	6
Either Cinema and Photography 320 and 322 or 355 and 356	8
Cinema and Photography courses numbered 400 to 499	24
Must include 498 or 499 or its equivalent.	
Cinema and Photography electives	0-16
Electives	16-32
Total	120

Cinema And Photography Suggested Curricular Guide

FIRST YEAR		FALL	SPRING	SECOND YEAR		FALL	SPRING
ENGL 101,102	3	3		CP 320 or CP 355.....	4	-	
MCMA 201,202	3	3		CP 322 or CP 356.....	-	4	
SPCM 101.....	3	-		CP 310 or CP 360.....	3	-	
Mathematics	-	3		CP 311 or CP 368.....	-	3	
Core Disciplinary Studies.....	6	6		MCMA 203.....	3	-	
				Core Disciplinary Studies	5	6	
				Core Integrative Studies	-	3	
Total.....	15	15		Total	15	16	
THIRD YEAR		FALL	SPRING	FOURTH YEAR		FALL	SPRING
CP 400-Level.....	6	6		CP 400-Level.....	6	6	
Core Integrative Studies	3	-		Electives	9	8	
Electives	6	9					
Total.....	15	15		Total	15	14	

Cinema and Photography Faculty

Blumenberg, Richard M. , Professor, Ph.D., Ohio University, 1969.	Logan, Fern , Assistant Professor, M.F.A., School of the Art Institute of Chicago, 1993.
Boruszkowski, Lilly A. , Associate Professor, M.F.A., Northwestern University, 1979.	Mercer, John , Professor, <i>Emeritus</i> , University of Nebraska, 1952.
Cocking, Loren D. , Assistant Professor, M.A., Ohio State University, 1969.	Overturf, Dan , Assistant Professor, M.F.A., Southern Illinois University, 1983.
Covell, Michael D. , Assistant Professor, M.F.A., Ohio University, 1975.	Paine, Frank , Associate Professor, <i>Emeritus</i> , B.S., Iowa State University, 1950.
Dulig, Susan , Assistant Professor, Ph.D., Cornell University, 1994.	Roddy, Jan , Assistant Professor, M.F.A., University of Illinois, 1987.
Gilmore, David A. , Associate Professor, M.F.A., Ohio University, 1969.	Swedlund, Charles A. , Professor, M.S., Illinois Institute of Technology, 1961.
Kolb, Gary P. , Associate Professor, M.F.A., Ohio University, 1977.	

Journalism (School, Major, Courses)

The School of Journalism at Southern Illinois University at Carbondale occupies a national leadership role in mass communication education with a comprehensive program combining a broad knowledge of the liberal arts with a detailed understanding of the practice of journalism in modern society. After completing the University's liberal arts core, undergraduate students learn about the integral connections between the various components of today's mass media in the college-wide core courses. They then acquire the specific skills necessary to become professionals in advertising/integrated marketing communications, news-editorial or other communication fields. Students are further encouraged to develop in-depth knowledge by completing the requirements of a structured minor in a subject area outside the College. The curriculum prepares students for positions of responsibility in advertising and related marketing communications fields, news-editorial journalism or other fields in which the ability to communicate is essential. The School of Journalism also prepares students for graduate studies in mass communication, the social sciences, and the law.

The School of Journalism is accredited by the Accrediting Council on Education in Journalism and Mass Communication, the agency formally recognized by the Council on Postsecondary Accreditation and the U.S. Office of Education.

Prospective students should be aware that excellent written and oral language skills are essential for successful careers in the journalism field. With this in mind, the School of Journalism has adopted admission and retention standards that emphasize language facility and academic proficiency.

Admission Standards

To be admitted to the School of Journalism, applicants must meet the following requirements:

Beginning freshmen must meet the University's regular admission requirements, as described in Chapter 2.

Transfer students who have completed fewer than 26 semester hours must meet the requirements for beginning freshmen and have earned an overall collegiate grade point average of at least 2.00 (4.0 scale).

Transfer students who have completed more than 26 semester hours must have earned an overall collegiate grade point average of at least 2.00.

Students currently enrolled or who were previously enrolled at SIUC in another major must meet the same requirements as transfer students. If they have completed more than 26 semester hours they must have an overall grade point average of at least 2.00. Students with fewer than 26 semester hours must meet beginning freshman requirements as well as have a grade point of at least 2.00.

Grade point average is calculated for purposes of admission to the School of Journalism by using all grades earned at SIUC and other collegiate institutions. This includes repeated courses.

Retention Policies

Students majoring in journalism must meet these retention requirements to continue their enrollment in the major:

Students who have completed 26 semester hours or more must have an accumulative SIUC grade point average of 2.00 or higher.

A grade of C or better is required in all journalism and Mass Communication and Media Arts College courses taken in order to be counted toward the major or minor and to satisfy prerequisite requirements.

Strong skills in the use of the English language are required to enter the first writing course in the School of Journalism: Journalism 302 or 310. Students may demonstrate proficiency in the use of the English language with an English ACTE subscore of 20 or higher, or by earning a grade of C or higher in English 290 or Linguistics 290 (for international students). This prerequisite must be successfully completed prior to registration for any course for which the prerequisite is required.

Students who are unable to meet these retention requirements will be placed in probationary status within the School of Journalism. These students will be given one semester to correct their deficiency prior to dismissal. Those who are dismissed from the School of Journalism but are eligible to continue in the University will be placed in the Undergraduate Academic Services or they may request permission to enter another collegiate unit.

Other Requirements

Journalism students must demonstrate typing ability of 30 words per minute by receiving a passing grade in a typing course or on a typing examination specified by the School of Journalism before registering for Journalism 302 or 310. Those who cannot meet this requirement must enroll in a typing course and receive a grade of C or better.

Enrollment in Journalism courses may be canceled for students who do not attend the initial class session of the semester.

Fees will be assessed for supplies and materials in some courses. Students should inquire about amounts before registering.

Subject to the approval of the School's director, undergraduate students may receive as many as 9 hours of journalism credit toward their degrees for courses not taken in residence.

Prior to the junior year the student must decide upon a specialization described below or obtain approval of a faculty sponsor and the school's director for another coherent combination of courses tailored to individual interest from the general requirements of the School of Journalism.

Bachelor of Science Degree, College of Mass Communication and Media Arts

The academic requirements for the Bachelor of Science degree in journalism include 30 to 36 hours in journalism and Mass Communication and Media Arts courses as approved by the School of Journalism a minimum of 28 hours in junior-senior level course work in the College of Liberal Arts, the College of Science or other areas approved by the faculty.

Students will also complete a 15-hour minor in an area approved by the School of Journalism. Students who select a minor within the College of Liberal Arts or another approved area may include those hours in their minimum of 28 junior-senior level hours.

The School of Journalism is accredited by the Accrediting Council on Education in Journalism and Mass Communication (ACEJMC). As a result, there are ACEJMC requirements that must be met. A major must complete a minimum of 90 semester hours outside of journalism and mass communication courses, with a minimum of 65 of those semester hours in liberal arts courses. The student, with the assistance of the journalism academic adviser, should exercise care in course selection to assure that these requirements are met.

While most students are best served by one of the following specializations, other programs of study in the major may be designed to meet special needs. Individualized programs might address such student interests as agricultural journalism, international communication, mass media institutions, and communication research. Such a specialized program of study must be sponsored by a journalism faculty member and approved by the director. Further information on specialized programs of study is available from the academic adviser.

ADVERTISING/INTEGRATED MARKETING COMMUNICATIONS SPECIALIZATION

Students in the advertising/integrated marketing communications specialization learn to analyze problems in, and identify solutions for, the promotion of goods and services through integrated marketing communications. They develop skills in verbal and visual communication and presentation of IMC materials. The program prepares students to enter a wide variety of positions with marketing communications firms (including advertising, sales promotion, public relations and direct marketing agencies), in the communications media and with retail or manufacturing firms.

NEWS-EDITORIAL SPECIALIZATION

As the communication revolution expands the ways in which news and information can be presented, the need increases for individuals with the ability to prepare and present news and information precisely and accurately for a variety of media. Students in the news-editorial specialization receive practical training in the theory and practice of identifying, gathering, processing, interpreting, writing and presenting news for traditional print and broadcast/cable media, and for new computer-based media. The program prepares students for professions in which the ability to communicate to mass audience is essential.

<i>University Core Curriculum Requirements</i>	41
<i>Mass Communication and Media Arts Core Courses</i>	9
<i>Requirements for a Major in Journalism</i>	27
<i>Specialization Requirements</i>	27
<i>Advertising/Integrated Marketing Communication Specialization: 301, 302, 303, 304, 405, 406, 407, Speech Communication 281, plus selected approved electives to bring the total to 27 hours.</i>	
<i>News-Editorial Specialization: 310, 311, 312, 442; two of 390, 411, and a choice of 391 or 462; one of 400, 401, 405, 407, 452, plus journalism electives to bring total to 27 hours.</i>	
<i>Minor</i>	15
<i>Approved Non-Journalism Electives</i>	28
<i>Must include Marketing 304 for Advertising/Integrated Marketing Communication Specialization</i>	
<i>Total</i>	120

Journalism Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
ENGL 101, 102.....	3	3	Core Science.....	3	3
Core Math.....	-	3	Multicultural.....	3	-
Core Humanities.....	3	3	Interdisciplinary.....	-	3
Core Social Science.....	3	3	Core Fine Arts.....	3	-
Core Human Health.....	2	-	MCMA 202, 203.....	3	3
SPCM 101.....	3	-	Major Course.....	3	3
MCMA 201.....	-	3	Liberal Arts Elective.....	-	3
<i>Total</i>	14	15	<i>Total</i>	15	15
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
Journalism Courses.....	6	6	Journalism Courses.....	6	6
Liberal Arts Courses.....	6	6	Liberal Arts Courses.....	3-4	6-7
Minor.....	3	3	Minor.....	6	3
<i>Total</i>	15	15	<i>Total</i>	15-16	15-16

Minor

A total of 15 hours of journalism courses at the 300 level or higher, at least one of which must be a writing course (302 or 310), approved by the journalism academic advisor constitutes a minor for nonjournalism majors.

Journalism Faculty

Akhavan-Majid, Roya, Associate Professor, Ph.D., University of Minnesota, 1988.

Atwood, L. Erwin, Professor, *Emeritus*, Ph.D., University of Iowa, 1965.

Brown, George C., Professor, *Emeritus*, Ph.D., Southern Illinois University, 1963.

Ford, James L. C., Professor, *Emeritus*, Ph.D., University of Minnesota, 1948.

Gruny, C. Richard, Assistant Professor, J.D., University of Illinois, 1959.

Hart, Jim Allee, Professor, *Emeritus*, Ph.D., University of Missouri, 1959.

Jaehnig, Walter, Associate Professor, Ph.D., University of Essex, 1974.

Johnson, Thomas J., Associate Professor, Ph.D., University of Washington, 1989.

Jugenheimer, Donald W., Professor and Director, Ph.D., University of Illinois, 1972.

Kelly, James D., Associate Professor, Ph.D., Indiana University, 1989.

Lowry, Dennis, Professor, Ph.D., University of Iowa, 1972.

McCoy, Ralph E., Professor, *Emeritus*, Ph.D., University of Illinois, 1956.

Paddon, Anna R., Assistant Professor, Ph.D., University of Tennessee, 1985.

Ramaprasad, Jyotika, Associate Professor, Ph.D., Southern Illinois University, 1985.

Rice, W. Manion, Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1967.

Shidler, Jon A., Associate Professor, M.S., Roosevelt University, 1980.

Spellman, Robert L., Jr., Associate Professor, J.D., Cleveland State University, 1977.

Stone, Gerald C., Professor, Ph.D., Syracuse University, 1975.

Stonecipher, Harry W., Professor, *Emeritus*, Ph.D., Southern Illinois University, 1971.

Radio-Television (Department, Major, Courses)

The Department of Radio-Television prepares students for positions in broadcasting and telecommunications by combining practical and theoretical courses in broadcasting with a broad liberal arts background.

To be admitted to the Department of Radio-Television, incoming freshmen must rank in the top one-fourth of their high school graduating class and have a Standard Composite ACT Score of 20 or higher or rank in the top one-half of their graduating class and have a Standard Composite ACT score of 22 or higher.

Transfer students seeking admission from another institution or from another program at Southern Illinois University at Carbondale must have a 2.25 grade point average or above. Transfer students with fewer than 26 semester hours must have a 2.25 grade point average or above as well as the rank and test score requirements of an entering freshman.

Mass Communication and Media Arts 201 must be completed and the language skills and English requirements described below must be met before students may advance into other radio-television courses, with the exception of 300M.

All radio-television students are required to maintain an overall 2.0 grade point average in the major. If a radio-television student does not achieve an accumulative 2.0 grade point average in the major in any one semester, that student is subject to departmental warning. Students who are on departmental warning and do not earn an overall 2.0 grade point average in radio-television courses in a subsequent semester will be placed in a status of departmental dismissal. A student who has been placed on collegiate dismissal will be transferred to Pre-Major Advisement or may seek transfer to another University program if the student has an overall SIUC grade point average of 2.0. A dismissed student may appeal to the Undergraduate Committee for reinstatement into the program.

Each student enrolled in the radio-television program must complete by the end of the sophomore year or, if a transfer student, by the end of the first semester of enrollment at SIUC and prior to enrollment in any RT course beyond 300m and Mass Communication and Media Arts 201:

1. English 101, 102 with a grade of *B* and, if the student receives less than a *B* in either English 101 or 102, English 290 with a grade of *C*;
2. A language skills examination, given by the department, with a minimum score of 7;
3. A passing grade in Mass Communication and Media Arts 201 before taking any courses in Radio-Television. This course may not be repeated more than once.

Transfer students must complete a minimum of 21 hours in radio-television courses at the University to earn a degree.

Bachelor of Arts Degree, College of Mass Communication and Media Arts

<i>University Core Curriculum Requirements</i>	41
Mass Communication and Media Arts Core	9
Mass Communication and Media Arts 201, 202 and 203	
Language Requirement	6-8
Foreign language or computer programming must be selected to meet this requirement.	
<i>Requirements for Major in Radio-Television</i>	30-39
Radio and Television 308, 393	6
Radio and Television electives with at least one course at the 400-level	24-33
<i>Minor in a Related Area</i>	15

All 15 hours must be in a single department beyond University Core Curriculum courses. Students should check with departmental advisers for a list of recommended minors.

<i>Electives</i> (All electives must be pre-approved by the department.)	11-19
<i>Total</i>	120

Radio and Television Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
MCMA 201, 202	3	3	MCMA 203	3	-
ENGL 101, 102.....	3	3	RT Sequence Course	3	3
SPCM 101.....	3	-	Computer/Foreign Language	3	3
MATH 113	-	3	Minor	-	3
Science	3	3	Humanities	3	-
Fine Arts.....	3	-	Social Science	3	3
Humanities	-	3	General Elective	-	3
<i>Total</i>	15	15	<i>Total</i>	15	15
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
RT 308.....	3	-	RT Sequence Course	6	-
RT Sequence Course.....	3	6	RT 393.....	-	3
Minor	3	3	RT Sequence Course-400 Level ...	-	3
Integrative Studies.....	3	3	Minor	3	3
General Elective	3	3	General Elective	6	4
<i>Total</i>	15	15	Health Education	-	2
			<i>Total</i>	15	15

Radio-Television Faculty

Brown, William Edward, Assistant Professor, *Emeritus*, M.S., Southern Illinois University, 1974.

Collette, Larry A., Assistant Professor, Ph.D., Michigan State University, 1991.

Dybvig, Homer E., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1970.

Foote, Joe S., Professor and *Dean*, Ph.D., University of Texas at Austin, 1979.

Gher, Leo, Assistant Professor, M.S., Southern Illinois University, 1980.

Hodgson, Scott R., Associate Professor, M.S., Southern Illinois University, 1990.

Keller, Kenneth R., Associate Professor, M.T.V., University of Illinois, 1966.

Kaye, Barbara K., Assistant Professor, Ph.D., Florida State University, 1994.

Kim, Haeryon, Assistant Professor, Ph.D., Ewha Women's University, 1990.

McCray, Judith, Assistant Professor, M.A., Rutgers University, 1985.

Murrie, Michael H., Associate Professor, M.A., University of Missouri, 1977.

Philbin, John, M.F.A., Lecturer, Southern Illinois University, 1995.

Robbins, Buren, Associate Professor, *Emeritus*, M.A., University of Iowa, 1935.

Shipley, Charles W., Professor, *Emeritus*, Ph.D., Florida State University, 1971.

Sitaram, K. S., Professor, Ph.D., University of Oregon, 1969.

Starr, Michael F., Associate Professor and *Chair*, J.D., Georgetown University, 1965.

West-Johnson, Phylis, Associate Professor, M.A., Texas A&M University, 1986.

College of Science

Jack Parker, *Dean*

Departments: Chemistry and Biochemistry; Computer Science; Geology; Mathematics; Microbiology; Physics; Plant Biology; Zoology

The College of Science offers majors leading to the Bachelor of Arts and Bachelor of Science degrees in the following fields of study:

Biological Sciences
Chemistry
Computer Science
Geology
Mathematics

Microbiology
Physics
Physiology
Plant Biology
Zoology

Included in the curriculum of each department are survey courses that provide an introduction to the subject matter of that discipline while fulfilling the University Core Curriculum requirements of Southern Illinois University at Carbondale. These courses assist all students to develop an understanding and appreciation of the impact of science on one's daily life. Elementary and advanced courses are provided to prepare students for professional employment or entrance into professional and graduate schools. Graduate training is also provided by each of the science departments leading to the M.S. or Ph.D. degree. The research interests of the faculty are extremely diverse.

Students in the College of Science may prepare for teaching at the secondary level by fulfilling the additional requirements of the College of Education. The Bachelor of Arts or the Bachelor of Science degree is granted to students who fulfill the requirements for graduation as given and the requirements of the departments in which the students declare their majors.

Regularly enrolled students must declare a College of Science major by the end of their sophomore year. Transfer students must declare a College of Science major by the beginning of their second semester following transfer. Students planning post-baccalaureate work in a professional field may designate their intention by declaring a preprofessional area as a secondary concentration, e.g., pre-medicine.

Each department has specific requirements for students to major in the selected field of interest, but the College of Science has some minimum general requirements listed below.

ACADEMIC REQUIREMENTS

None of these general academic requirements may be satisfied by taking the required courses on a Pass/Fail grading basis.

Biological Sciences. Six semester hours in courses offered by the biological sciences departments in the college, with the proviso that this requirement cannot be satisfied in whole or in part by the University Core Curriculum courses, but may be substituted for the latter in meeting the University Core Curriculum requirements.

Mathematics. The mathematics requirement can be met by (a) passing Mathematics 108 and 109 or 111 or its equivalent or Mathematics 141 or its equivalent, (b) by proficiency credit.

Physical Sciences. Six semester hours in courses offered by the physical science departments of the college, with the proviso that this requirement cannot be satisfied in

whole or in part by University Core courses, but may be substituted for the latter in meeting the University Core Curriculum requirements.

Supportive Skills. Two courses, totaling at least six credit hours must be completed as supportive skills. Supportive skills courses are courses in communication or computation skills which have been approved by the major program and must be chosen from the following subject areas: (a) foreign language; (b) English composition or technical writing; (c) statistics; or (d) computer science. Students may not fulfill this requirement with courses offered by the student's major department or program. Because departments have different supportive skills requirements, students should consult individual program descriptions for approved courses for each major.

General Requirements. At least 40 hours of the student's 120 hours for graduation must be at the 300- or 400-level. The total may include transfer credit for courses judged by the department involved to be equivalent to its upper division courses. For transfer students submitting only the last year in residence, at least 24 of these must be at the 300- or 400- level.

PREPROFESSIONAL PROGRAMS

A student planning a professional career in any of the following fields should register in the College of Science immediately: dentistry, medicine, optometry, pharmacy, physical therapy, physician assistant, or podiatry. Students pursuing a career in veterinary science should register in the College of Science or the College of Agriculture. Students planning a double major need register only in the College in which they will earn a degree. Preprofessional students should refer to the baccalaureate section in this chapter.

Biological Sciences (Major)

Biological Sciences is an appropriate major for students wishing to pursue a pre-professional curriculum, planning a teaching career, seeking a career as a laboratory research scientist or pursuing an interest in environmental biology. The Biological Sciences major is an interdepartmental, interdisciplinary major designed to give the student a measure of breadth rather than an in-depth concentration in one particular facet of the biological areas. The curriculum is drawn from the resources of four life science departments, each of which have their own undergraduate degrees.

Students with a major in Biological Sciences may not select one of the four life science areas as a minor, and students electing to pursue a double major may not use more than 11 semester hours of biological sciences courses to satisfy the requirements for both majors. In addition to the biological sciences courses, students are required to take courses in mathematics, physics and chemistry.

Students planning a major in Biological Sciences should consult with the director of the Biological Sciences Program for information concerning specific questions about the curriculum requirements.

Bachelor of Arts Degree, College of Science

<i>University Core Curriculum Requirements</i>	41 ¹
<i>College of Science Academic Requirements</i>	6-8
Supportive Skills: at least 6 credit hours chosen from Mathematics 282 or 283 or Plant Biology 360; Computer Science 200, 201, 202 or 210; English 291 or 491; or any two semester sequence of a foreign language ²	6-8
<i>Requirements for Biological Sciences</i>	64-66

Biology 200a,b.....	6
Biology 305	3
Microbiology 301	4
Physiology 310	5
Plant Biology 204	4
Zoology 220a,b	6
Any one of Biology, Microbiology, Physiology, Plant Biology or Zooology 300-level courses	3
At least 9 credit hours of Microbiology, Physiology, Plant Biology or Zoology 400-level courses	9 ³
Chemistry 200, 201	4
Chemistry 340, 341	5
Chemistry 350	3
Physics 203a, 253a or Physics 205a, 255a	4
Mathematics 108 and 109, or 111	5-6
Any one of the following: Mathematics 141, or 150; Plant Biology 360, Mathematics 282 or 283 ⁴	3-4
General Electives	5-9 ⁵
Total	120

¹The 41 hour requirement may be reduced by taking major requirements which are approved substitutes for University Core Curriculum courses.
²The supportive skills foreign language requirement may also be met by one of the following: (a) completing three years of one language in high school with a grade of C or better; or (b) earning 8 credit hours of 100-level courses in one language by proficiency examination.
³Courses identified as independent research, special problems, readings or seminars may not be used to fulfill this requirement.
⁴If Plant Biology 360 or Mathematics 282 or 283 is used as a supportive skill requirement, it may not be used to fulfill the mathematics requirement.
⁵Substitution of majors courses for University Core Curriculum courses will increase the number of general elective hours.

Biological Sciences Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
ENGL 101, 102	3	3	BIOL 200a,b	3	3
Fine Arts Core	3	-	CHEM 200, 201.....	4	-
MATH 108,109.....	3	3	CHEM 340, 341.....	-	5
Social Science Core	-	3	MATH 141	4	-
PLB 200 or ZOOL 118	4	-	Humanities Core.....	-	3
SPCM 101.....	-	3	Social Science Core	3	-
Elective.....	2	-	ZOOL 220a or b.....	-	3
ZOOL 220a or b	-	3			
Total.....	15	15	Total.....	14	14
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
Humanities Core.....	3	-	MICR 301	4	-
CHEM 350	-	3	BIOL 305.....	-	3
MATH 282	3	-	Multicultural	3	-
PLB 204	-	4	ENGL 291.....	-	3
PHSL 310	5	-	Interdisciplinary	-	3
BIOL 300-level.....	-	3	BIOL 400-level	6	3
PHYS 203a, 253a	4	-	Elective	3	4
Elective.....	-	5			
Total.....	15	15	Total.....	16	16

Bachelor of Science Degree, College of Education

Students planning to obtain their degree in the College of Education must satisfy all the requirements of that college. The teacher education program requires 28 hours of professional education courses. See Teacher Education Program 3. University Core Curriculum requirements for teacher education must include the following: ENGL 101, 102; SPCM 101; MATH 108 or 111; CHEM 200; PLB 200; FL 101, HIST 101a¹, 101b, PHIL 103a or 103b; HIST 110; AD 101, HIST 201, MUS 103 or THEA 101; ENGL 121 or 204; FL 313I¹, HIST 304I¹ or PHIL 308i; POLS 114; PSYC 102; ANTH 202, HIST

202, 210 or SOC 215; HED 101 or PE 101. The requirements in biological sciences will be the same as those in the College of Science. Those students desiring to attain a secondary education teaching certificate must also enroll in Curriculum and Instruction 468.

¹ One course in non-western civilization must be taken

Minor

A minor in biological sciences consists of a minimum of 20 hours and must include: any one of Biology 305, 306 or 307 (3 hours); at least nine hours from Microbiology 301, Physiology 310, Plant Biology 204 and Zoology 220a,b; and eight hours selected from course offerings in Microbiology, Physiology, Plant Biology and Zoology. A student with a major in one of the four life sciences may not take a minor in Biological Sciences. All minors must be approved by the director of the Biological Sciences Program.

Chemistry and Biochemistry (Department, Major [Chemistry], Courses)

The Department of Chemistry and Biochemistry offers two degree programs with a major in chemistry. First there is the Bachelor of Science degree in the College of Science. This degree is for those who wish to prepare for graduate study in chemistry or who will become professional chemists. Within this degree there are two options. A more rigorous program of study carries American Chemical Society (ACS) certification, while a program with fewer hours does not. Although students are encouraged to seek ACS certification it should be understood that ACS certification is not a requirement for graduate study or employment as a chemist.

The Bachelor of Arts degree in the College of Science is designed primarily for students who wish to complete a major in chemistry but will specialize in areas related to it. Students complete a group of core courses, along with additional courses that will lead to a specialization in biochemistry, business, environmental or forensic chemistry.

A knowledge of computer programming is recommended for all majors in chemistry.

The department enforces the following retention policy: A grade point average of at least 2.0 in chemistry courses is required on completion of the first 22 hours of formal chemistry coursework. Any exception will require written approval of the chair of undergraduate advisement. A minimum gpa of 2.0 in chemistry coursework is needed in order for a student to receive a degree in Chemistry. Students will meet with a departmental advisor each semester for planning, monitoring progress and approval of courses appropriate to their goals and interests.

Students taking a laboratory course will be required to purchase a notebook or a laboratory exercise book. Students are required to wear approved safety glasses in the laboratory at all times. All students enrolled in a chemistry class that includes a laboratory session will be assessed a breakage charge for all glassware broken. The amount assessed will be based on actual replacement costs. A fee will also be assessed if a student fails to check in their locker at the end of the semester.

Students wishing more detailed information should contact the undergraduate adviser, Department of Chemistry and Biochemistry, Southern Illinois University at Carbondale, Carbondale, IL 62901.

Bachelor of Science Degree, College of Science

University Core Curriculum Requirements 41

<i>College of Science Academic Requirements</i>	11-14
Supportive Skills: a minimum of six hours from among: Chinese 120, Classics 130, 133, French 123, German 126, Japanese 131, Russian 136, Spanish 140, Computer Science 200, 210, Mathematics 483, 484 and English 291. If a foreign language is chosen, two semesters of one language must be taken to satisfy the requirement	6-8
Mathematics 108 and 109 or 111	(3) + 2-3
Biological Sciences (not Core Curriculum)	(3) + 3
<i>Requirements for Major in Chemistry</i>	56-57
Chemistry 200, 201, 210, 211, 230, 340, 341, 342, 343, 350 (or 451a), 411, 434, 461, 462, 466a,b	(3) + 37-38
Mathematics 150, 250 and either 221 or 305	11
Physics 205a,b; 255a,b	8
<i>Electives</i>	<u>8-12</u>
<i>Total</i>	120

American Chemical Society Certification:

To receive certification by the ACS a student must complete the following additional courses: Chemistry 396 (2) or 496 (2) and any two courses from among 431, 439, 444, 451b and 468; and Mathematics 251. These courses may substitute for electives.

Bachelor of Arts Degree, College of Science

<i>University Core Curriculum Requirements</i>	41
<i>College of Science Academic Requirements</i>	11-14
Supportive Skills: a minimum of six hours from among: Chinese 120, Classics 130, 133, French 123, German 126, Japanese 131, Russian 136, Spanish 140, Computer Science 200, 210, Mathematics 483, 484 and English 291. If a foreign language is chosen, two semester of one language must be taken to satisfy the requirement.	6-8
Mathematics 108 and 109, or 111	(3) + 2-3
Biological Sciences (not University Core Curriculum)	(3)+ 3
<i>Requirements for Major in Chemistry</i>	48-63
Required Core Courses: Chemistry 200, 201, 210, 211, 230, 340, 341, 342, 343, 350, (or 451a), 411, 462, 466a	(3) + 29-30
Mathematics 150	4
Physics 203a,b and 253a,b or 205a,b and 255a,b	8
Required Curriculum Specialization:	(2-3) + 7-21

Biochemistry Specialization

(2)+ 7

For students interested in the biological aspects of chemistry.

Required: An additional nine hours at the 300-400 level in biochemistry, microbiology, physiology, plant biology or zoology, chosen in consultation with an adviser in chemistry and approved by the chair of the department. Chemistry 451a,b are strongly recommended in lieu of 350 and three of the additional nine hours above. Chemistry 456 should be substituted for 462. A course at the 300-400 level that includes a lab in a bioscience area is recommended.

Business Specialization

(3) + 21

For students interested in pursuing a career in chemistry, but with an interest in the business aspects of it such as management,

marketing and production, rather than research and development.

Required: An additional three hours in chemistry at the 300-400 level, chosen in consultation with an adviser and approval of the chair of the department; Mathematics 250; Accounting 220, 230; Economics 240; Finance 330; Management 304; and Marketing 304.

Environmental Chemistry Specialization 16
For students interested in chemistry as it relates to air, water and soil in the environment.

Required: Chemistry 431 and nine hours from among Chemistry 434, Civil Engineering 310, Mechanical Engineering 416 and Plant and Soil Science 446 (has 240 as a prerequisite); Mathematics 250 and 283 or 483. Mathematics 483 cannot count as a supportive-skills requirement.

Forensic Chemistry Specialization 13
For students interested in chemistry applied to solving problems encountered in crime labs.

Required: Chemistry 434, 439, 396-2 (Chemistry 396 will involve research on problems of interest to the State Crime Lab or a formal internship at the State Crime Lab. The latter is subject to availability and approval of the Crime Lab); Mathematics 250.

<i>Electives</i>	<u>2-20</u>
<i>Total</i>	120

Chemistry Suggested Curricular Guide

FIRST YEAR		FALL	SPRING	SECOND YEAR		FALL	SPRING
CHEM 200, 201.....	4	-		CHEM 230.....	4	-	
CHEM 210, 211.....	-	4		CHEM 340, 341.....	5	-	
ENGL 101, 102.....	3	3		CHEM 342, 343.....	-	5	
MATH 108, 109.....	3	3		CHEM 350.....	-	4	
Fine Arts.....	-	3		MATH 150, 221.....	4	3	
Human Health.....	-	2		Humanities.....	-	3	
PLB 200 or ZOOL 118.....	4	-		SPCM 101.....	3	-	
<i>Total</i>	14	15		<i>Total</i>	16	15	
THIRD YEAR		FALL	SPRING	FOURTH YEAR		FALL	SPRING
CHEM 461, 462.....	3	3		CHEM 434.....	4	-	
CHEM 466a,b.....	1	1		CHEM 411.....	-	3	
Humanities.....	3	-		CHEM 444 or 468.....	3	-	
MATH 250, 251.....	4	3		CHEM 431.....	-	3	
PHYS 205a, 255a.....	4	-		CHEM 396 or 496.....	-	2	
PHYS 205b, 255b.....	-	4		CS 200.....	-	3	
Social Science.....	-	3		MATH 483.....	4	-	
<i>Total</i>	15	14		Integrative Studies.....	3	3	
				Social Science.....	3	-	
				<i>Total</i>	17	14	

Minor

The minor in chemistry requires a minimum of 16 semester hours of chemistry in formal course work at the 200 level or above including 200, 201, 210, 211 or their equivalents. At least eight of the sixteen hours must be taken at SIUC. A grade point average of at least 2.0 is required in the minor, both in course work taken at SIUC and overall.

Chemistry and Biochemistry Faculty

Arnold, Richard T., Professor, *Emeritus*, Ph.D., University of Illinois, 1937.

Bartholomew, Blaine, Assistant Professor, Ph.D., University of California, Davis, 1988.

Bausch, Mark J., Associate Professor, Ph.D., Northwestern University, 1984.

Beyler, Roger E., Professor, *Emeritus*, Ph.D., University of Illinois, 1949.

Caskey, Albert L., Associate Professor, *Emeritus*, Ph.D., Iowa State University, 1961.

Dave, Bakul C., Assistant Professor, Ph.D., University of Houston, 1993.

Davis, Joe M., Associate Professor, Ph.D., University of Utah, 1985.

Groziak, Michael P., Associate Professor, Ph.D., Northwestern University, 1983.

Gupta, Ramesh, Associate Professor, Ph.D., University of Illinois, 1981.

Guyon, John C., Professor, Ph.D., Purdue University, 1961.

Hadler, Herbert I., Professor, *Emeritus*, Ph.D., University of Wisconsin, 1952.

Hadley, Elbert H., Professor, *Emeritus*, Ph.D., Duke University, 1940.

Hardwicke, Peter M.D., Professor, Ph.D., Kings College, London, 1969.

Hinckley, Conrad C., Professor, Ph.D., University of Texas, 1964.

Koropchak, John A., Professor and *Chair*, Ph.D., University of Georgia, 1980.

Koster, David F., Professor, Ph.D., Texas A & M University, 1965.

Lim, Louis, Assistant Professor, Ph.D., Washington University, 1979.

Meyers, Cal Y., Distinguished Professor, Ph.D., University of Illinois, 1951.

Neckers, J. W., Professor, *Emeritus*, Ph.D., University of Illinois, 1927.

Niederhoffer, Eric C., Associate Professor, Ph.D., Texas A&M University, 1983.

Phillips, John B., Professor, Ph.D., University of Arizona, 1977.

Scheiner, Steven I., Professor, Ph.D., Harvard University, 1976.

Schmit, Joseph, Associate Professor, Ph.D., Purdue University, 1971.

Schmulbach, C. David, Professor, *Emeritus*, Ph.D., University of Illinois, 1958.

Shriver, John W., Professor, Ph.D., Case Western University, 1977.

Smith, Gerard V., Professor, Ph.D., University of Arkansas, 1959.

Trimble, Russell F., Professor, *Emeritus*, Ph.D., Massachusetts Institute of Technology, 1951.

Tyrrell, James, Professor, Ph.D., University of Glasgow, 1963.

Van Lente, Kenneth A., Professor, *Emeritus*, Ph.D., University of Michigan, 1931.

Vermeulen, Lori A., Assistant Professor, Ph.D., Princeton University, 1994.

Wotiz, John H., Professor, *Emeritus*, Ph.D., Ohio State University, 1948.

Zhu, Xiaoyang, Assistant Professor, Ph.D., University of Texas, 1992.

Computer Science (Department, Major, Courses)

Computer Science encompasses the theory, tools and techniques by which information is derived, stored, manipulated, and communicated using computers. It deals particularly with the study of algorithms that are used to direct the computer and with the expression of these algorithms as programs. Of central concern is the study and further development of the computer systems, including both hardware and software, that support the execution of these programs.

The Computer Science department offers courses covering all major areas of computer science leading to a Bachelor of Science degree through the College of Science. These courses prepare students for a variety of professional and technical careers in business, industry, and government or for graduate work leading to advanced degrees. In addition, the department offers an undergraduate minor and service courses for students from other fields who will use computer science as a tool in their own areas. Students interested in computer science will be advised with respect to computer science courses by the department so they may profitably pursue their academic and professional interests.

The department enforces the following retention policy: A computer science major will not be permitted to enter any of the courses, 220, 306, 311, 315, 320, 330 and 355, unless that student has achieved a grade point average of at least 2.00 for all required precedent computer science courses. Any exceptions to this policy will require the written approval of the departmental chair.

The department also enforces the following restriction on students repeating its courses: a student cannot repeat a course or its equivalent, in which a grade of B or better was earned, without the consent of the department.

Bachelor of Science Degree, College of Science

<i>University Core Curriculum Requirements</i>	41 ¹
<i>College of Science Academic Requirements (See above)</i>	13
Biological Sciences	(3) ¹ + 3
Physical Sciences	(3) ¹ + 3
Supportive Skills	7
A course in statistics, Mathematics 483, and a course in English composition beyond English 102 chosen from an approved list. ²	
<i>Requirements for Major in Computer Science</i>	56-65
Computer Science Core	28
Computer Science 202, 215, 220, 306, 311, 315, 320, 330, 355, 399, each with a grade of C or better.	
Computer Science electives	18
To build on the core and to provide breadth and depth, six 400-level Computer Science courses must be chosen from an approved list. ²	
Mathematics 150, 221, 250	(3) ¹ + 8-11
Science	(3-6) ^{1,3} + 2-8
A two-semester sequence of laboratory science courses chosen from an approved list. ²	
<i>Electives</i>	1-10
<i>Total</i>	120

¹ The 41 hour Core curriculum requirement is reduced by taking science and mathematics courses which are approved substitutes.
² See departmental adviser for the current approved list.
³ These courses can be chosen to satisfy the science requirement of the college and the major.

Computer Science Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
CS 202	-	3	CS 220, 315	3	3
CS 215	-	3	ENGL 290	3	-
ENGL 101, 102	3	3	MATH 250, 221	4	3
MATH 111, 150	5	4	PHYS 205a, 255a	4	-
PHIL 105	3	-	PHYS 205b, 255b	-	4
SPCM 101	-	3	Core Humanities	-	3
ZOOL 214	3	-	Core Social Science	-	3
<i>Total</i>	14	16	<i>Total</i>	14	16
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
CS 306	-	3	CS 399	1	-
CS 311	3	-	CS 4XX	3	3
CS 320	3	-	CS 4XX	3	3
CS 330	3	-	CS 4XX	3	3
CS 355	-	3	Core Interdisciplinary	-	3
MATH 483	-	4	Core Multicultural	3	-
PLB 200 or ZOOL 118	-	4	Free Elective	3	3
Core Fine Arts	3	-			
Core Social Science	3	-			
<i>Total</i>	15	14	<i>Total</i>	16	15

Minor

A minor consists of Computer Science 202, 215, 220, and at least nine hours of 300-level Computer Science course work.

Computer Science Faculty

Carver, Norman F., III, Assistant Professor, Ph.D., University of Massachusetts, 1990.

Chu, Jiang-Hsing, Associate Professor, Ph.D., University of Maryland, 1989.

Danhof, Kenneth J., Professor and Chair, Ph.D., Purdue University, 1969.

Gupta, Bidyut, Associate Professor, Ph.D., University of Calcutta, 1986.

Hou, Wen-Chi, Associate Professor, Ph.D., Case Western Reserve University, 1989.

Mark, Abraham M., Professor, Emeritus, Ph.D., Cornell University, 1947.

McGlinn, Robert, Associate Professor, Ph.D., Southern Illinois University, 1976.

Phillips, Nicholas C. K., Associate Professor, Ph.D., University of Natal, 1967.

Tragoudas, Spyros, Associate Professor, Ph.D., University of Texas at Dallas, 1991.

Wainer, Michael S., Associate Professor, Ph.D., University of Alabama-Birmingham, 1987.

Wright, William E., Professor, D.Sc., Washington University, 1972.

Zargham, Mehdi R., Professor, Ph.D., Michigan State University, 1983.

Geology (Department, Major, Courses)

In the field of geology a student may work toward either a Bachelor of Arts or Bachelor of Science degree.

The Bachelor of Arts degree requires a major in geology but is a flexible program, permitting a student to combine education in geology with courses in other areas, such as other environmental sciences, management, or pre-law. A minor is optional. Having obtained a Bachelor of Arts degree, students may continue their education toward a Master of Science degree in geology, although it may be necessary to absorb deficiencies in physics and mathematics.

The Bachelor of Science degree requires a major in geology and courses in biology, chemistry, mathematics, physics, and science electives. This degree will ordinarily be pursued by students desiring to do graduate work in geology or to become professional geologists.

Bachelor of Arts Degree, College of Science

University Core Curriculum Requirements	41
College of Science Requirements	(6) + 11-12
Mathematics 108 and 109 or 111	(3) + 2-3
Biological Sciences (Not University Core Curriculum)	(3) + 3
Supportive Skills (choose from the following)	6
Computer Science 200 or 201 or 202 or Engineering 222, English 291 or 491, Mathematics 282 or 283, two semester sequence of a foreign language offered at Southern Illinois University at Carbondale	
Requirements for Major in Geology	(3) + 42-46 ¹
Geology 220, 221, 223, 224, 302, 310, 315, 325, 425, 474, and 450 or 454	(3) + 30-34
Chemistry 200, 201, 210, 211	8
Physics 203a, 253a or 205a, 255a	4
Electives	20-25
Total	121

Bachelor of Arts in Geology Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
GEOL 220, 223	4	-	GEOL 310	4	-
GEOL 221, 224	-	4	GEOL 315	-	4
ENGL 101, 102	3	3	PHYS 203a, 253a	4	-
CHEM 200, 201	4	-	BIOL SCI	-	3
CHEM 210, 211	-	4	SPCM 101	-	3
MATH 108 ² , 109	3	3	Core Social Science	3	3
Core Human Health	2	-	Core Humanities	3	3
<i>Total</i>	16	14	<i>Total</i>	14	16
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
GEOL 302	4	-	Interdisciplinary	3	-
GEOL 325	-	4	GEOL 450	-	3
GEOL 425	4	-	Elective	9	9
GEOL 474	-	3	Supportive Skills	3	3
BIOL SCI (w/Lab) ³	4	-			
Core Fine Arts	-	3			
Core Multicult Diversity	3	-			
Elective	-	5			
<i>Total</i>	15	15	<i>Total</i>	15	15

¹ Geology 220 and 223 subs for Geology 110² Mathematics 108 may be used for Core Curriculum Mathematics³ Subs for Core biology**Bachelor of Science Degree, College of Science**

University Core Curriculum Requirements	41
College of Science Requirements	(6) + 11-12
Mathematics 108 and 109 or 111	(3) + 2-3
Biological Sciences (Not University Core Curriculum)	(3) + 3
Supportive Skills (choose from the following)	6
Computer Science 200 or 201 or 202 or Engineering 222, English 291 or 491, Mathematics 282 or 283, two semester sequence of a foreign language offered at Southern Illinois University at Carbondale	
Requirements for Major in Geology	(3) + 67-68 ¹
Geology 220, 221, 223, 224, 302, 310, 315, 325, 415, 425, 454, 474, and 435 or 436	(3) + 40-41
Geology electives	4
Mathematics 150	4
Chemistry 200, 201, 210, 211	8
Physics 203a,b, 253a,b or 205a,b 255a,b	8
Electives in supporting sciences or technology	3
<i>Total</i>	121-123

¹Numbers in parenthesis are hours which may be substituted into the University Core Curriculum.**Bachelor of Science in Geology Suggested Curricular Guide**

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
GEOL 220, 223 ¹	4	-	GEOL 310	4	-
GEOL 221, 224	-	4	GEOL 315	-	4
ENGL 101, 102	3	3	PHYS 203a,b	3	3
CHEM 200, 201	4	-	PHYS 253a,b	1	1
CHEM 210, 211	-	4	MATH 150	4	-
MATH 108 ² , 109	3	3	SPCM 101	-	3
Core Human Health	2	-	Core Humanities	3	3
<i>Total</i>	16	14	<i>Total</i>	15	14

THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
GEOL 302.....	4	-	GEOL 435 or 436	3-4	-
GEOL 325.....	-	4	GEOL 415.....	-	3
GEOL 425.....	4	-	GEOL Elective	3	3
GEOL 474.....	-	3	Supportive Skills	3	3
Core Fine Arts	3	-	Integrative Studies	3	3
BIOL SCI (w/lab) ³	-	4	Sci/Tech Elective	3	-
Core Social Science	3	3	BIOL SCI	-	3
Total.....	14	14 ⁴	Total.....	15-16	15

¹Geology 220, 223 subs for Geology 110
²Mathematics 108 may be used for Core Curriculum Mathematics
³Subs for Core Biology
⁴Geology 454 for six hours needs to be taken in Summer school after the junior year.

Minor

A minor consists of 16 hours, determined by consultation with the geology adviser.

Geology Faculty

- Crelling, John C.**, Professor, Ph.D., The Pennsylvania State University, 1973.

Dutcher, Russell R., Professor, *Emeritus*, Ph.D., The Pennsylvania State University, 1960.

Esling, Steven Paul, Associate Professor, Ph.D., University of Iowa, 1984.

Fifarek, Richard H., Associate Professor, Ph.D., Oregon State University, 1985.

Frank, Charles O., Assistant Professor, Ph.D., Syracuse University, 1973.

Harris, Stanley E., Jr., Professor, *Emeritus*, Ph.D., University of Iowa, 1947.

Kruge, Michael A., Associate Professor, Ph.D., University of California, Berkeley, 1985.
- Marzolf, John E.**, Associate Professor, Ph.D., University of California at Los Angeles, 1970.

Pinter, Nicholas, Assistant Professor, Ph.D., University of California, Santa Barbara, 1992.

Ravat, Dhananjay, Assistant Professor, Ph.D., Purdue University, 1989.

Sexton, John L., Professor, Ph.D., Indiana University, 1974.

Staub, James R., Associate Professor, Ph.D., University of South Carolina, 1985.

Utgaard, John E., Professor, Ph.D., Indiana University, 1963.

Zimmerman, Jay, Jr., Professor and *Chair*, Ph.D., Princeton University, 1968.

Mathematics (Department, Major, Courses)

Opportunities for mathematics majors have expanded greatly in recent years. Mathematics majors become actuaries, statisticians, mathematical computer scientists, applied mathematicians, operations research analysts and mathematical researchers. Mathematics is growing and changing and holds fascinating challenges for inquiring minds.

As an undergraduate mathematics major at Southern Illinois University at Carbondale, you may work toward a Bachelor of Science degree in the College of Science or the College of Education, or a Bachelor of Arts degree in the College of Liberal Arts. The classes in the mathematics major curriculum are small and are taught by senior faculty members. A strong support system of college and departmental advisement is available to you at SIUC throughout the year.

A student planning for employment with a bachelor's degree should consider a minor or a second major in some field in which mathematics is applied. Many students earn a double major in mathematics and computer science. All of the bachelor's degree programs in mathematics, including the Bachelor of Science degree in the College of Education, have sufficient flexibility to allow you to prepare for alternate career possibilities.

To prepare to major in mathematics at SIUC, you should have a solid high school preparation in algebra, geometry in two and three dimensions, and trigonometry, including a substantial study of functions and graphing. Students transferring to SIUC after two years at a community college should have completed the calculus se-

quence and, if possible, linear algebra and a course in Pascal or equivalent programming proficiency.

As a mathematics major at SIUC, you will meet with a Department of Mathematics adviser at least once each semester for planning and departmental approval of courses appropriate to your goals and interests.

A grade of C or better is required in every mathematics course used to satisfy departmental requirements.

Double majors in mathematics and related fields

Special provisions are made for students to earn a double major in mathematics and a field in which mathematics is extensively applied. The courses Math 361, 447, 449, 471, 472, and 475 carry credit in both mathematics and computer science. See Bachelor of Science Degree, College of Science for specific requirements in mathematics for students who also earn a major or minor in computer science.

For students who also have a major in engineering, physics, or chemistry, the requirements for a major in mathematics are Math 150, 221, 250, 251, 305 and five additional mathematics courses numbered above 300, including at least three courses above 400, and including two of the three areas of algebra, analysis, probability and statistics. The courses must be approved by a mathematics department adviser.

Students majoring in business and administration with a secondary concentration in mathematics may obtain a second major in mathematics. The requirements are Mathematics 150, 250, 251, 221, and five approved mathematics courses at the 300-400 level, of which at least four are at the 400-level. Recommended courses for this program are Mathematics 361, 471, 472, 483, 484, Management 352, 453, 456; Economics 315, 465; Finance 310, 331, and 341.

Option in Statistics

A student majoring in mathematics in the College of Science or the College of Liberal Arts may choose to concentrate in statistics. For this option, the 300- and 400-level course requirements are: 417; 305 or 472; one of 352, 450, 452, or 455; 380 or 480; 483; and at least two of 473, 481, 484, 485.

Bachelor of Science Degree, College of Science

University Core Curriculum Requirements 41

College of Science Academic Requirements (6) + 14¹

Supportive Skills: a two-semester sequence in a foreign language, or three years of one foreign language in high school with no grade lower than C.

Biological Sciences (not University Core) (3) + 3

Physical Sciences (not University Core) (3) + 3

Requirements for Major in Mathematics (3) + 41¹

Mathematics 150, 221, 250, 251 (3) + 11

Computer Science 202 or approved substitute 3

At least one course from each of the following groups: 12

(one group may be waived for students who have a minor in Computer Science)

Group A: Algebra/Discrete Mathematics/Linear Algebra: 319, 349, 419, 421, 447, 449

Group B: Analysis: 352, 450, 452, 455

Group C: Applied Mathematics/Numerical Analysis: 305, 361, 471, 472, 475a

Group D: Probability/Statistics: 380, 480, 483

Five additional courses in mathematics numbered above 299 (excluding 311, 314, 319e, 352e, 400, 411, 412, 457, 458) 15

Each student's program must include at least 5 mathematics courses at the 400 level and must be approved by a mathematics department adviser.

Courses taken Pass/Fail will not count toward the major.

Electives	24
Total	120

College of Science Mathematics Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
MATH 111 ¹	5	-	MATH 221	3	-
MATH 150	-	4	MATH 250, 251	4	3
CS 202	-	3	MATH 302 or 305	-	3
ENGL 101, 102	3	3	Human Health	2	-
Fine Arts	3	-	SPCM 101	3	-
Foreign Language	4	4	PLB 200 or ZOOL 118 ²	4	-
			Biology	-	2-3
			Humanities	-	3
			Social Science	-	3
Total	15	14	Total	16	14-15
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
Two 300-400-Level Math ³	6	6	Two 300-400-Level Math ³	6	6
Humanities	3	-	Multicultural	3	-
PHYS 203a, 253a ²	4	-	Interdisciplinary	-	3
PHYS 203b	-	3	Elective	6	6
Social Science	-	3			
Elective	2-3	3			
Total	15-16	15	Total	15	15

¹Fulfills University Core Curriculum foundation skills
²Fulfills University Core Curriculum science requirement
³Must be approved by a mathematics advisor.

Bachelor of Arts Degree, College of Liberal Arts

University Core Curriculum Requirements	41
College of Liberal Arts Academic Requirements	11
English Composition	3
Foreign Language	8
Requirements for Major in Mathematics	(3) + 41 ¹
Mathematics 150, 221, 250, 251,	(3) + 11
Computer Science 202 or approved substitute	3
At least one course from each of the following groups:	12
(One group may be waived for students who have a minor in Computer Science)	
Group A: Algebra/Discrete Mathematics/Linear Algebra: 319, 349, 419, 421, 447, 449	
Group B: Analysis: 352, 450, 452, 455	
Group C: Applied Mathematics/Numerical Analysis: 305, 361, 471, 472, 475a	
Group D: Probability/Statistics: 380, 480, 483	
Five additional courses in mathematics numbered above 299 (excluding 311, 314, 319e, 352e, 400, 411, 412, 457, 458)	15
Each student's program must include at least 5 mathematics courses at the 400 level and must be approved by a mathematics department adviser.	
Courses taken Pass/Fail will not count toward the major.	
Secondary Concentration Requirements	6-9

Six to nine hours approved by the Department of Mathematics in one of the following areas: engineering, computer science, physics, economics, business and administration. A minor in any department of the College of Liberal Arts or the College of Science may be substituted for this requirement.

<i>Electives</i>	15-18
<i>Total</i>	120

¹Numbers in parenthesis are hours which may be substituted into the University Core Curriculum.

College of Liberal Arts Mathematics Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
MATH 111 ¹	5	-	MATH 221.....	3	-
MATH 150	-	4	MATH 250, 251.....	4	3
CS 202.....	-	3	MATH 302 or 305.....	-	3
ENGL 101, 102.....	3	3	Human Health.....	2	-
Fine Arts.....	-	3	SPCM 101	3	-
Humanities	3	-	Science	3	3
Social Science.....	3	3	Humanities	-	3
			English Composition	-	3
<i>Total</i>	14	16	<i>Total</i>	15	15
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
Two 300-400 Level Math ²	6	6	Two 300-400 Level Math ²	6	6
Secondary Concentration	3	3	Secondary Concentration.....	3	-
Multicultural	3	-	300-400 Level Elective	3	8
Interdisciplinary.....	-	3	Additional Science w/lab	3	-
Foreign Language.....	4	4			
<i>Total</i>	16	15	<i>Total</i>	15	14

¹Fulfills University Core Curriculum Foundation Skills

²Must be approved by a mathematics advisor.

Bachelor of Science Degree, College of Education

Students in the College of Education with a major in mathematics must plan schedules of mathematics courses numbered above 199 with a mathematics adviser. Grades must be at least C in mathematics courses used to satisfy these requirements.

University Core Curriculum Requirements 41

To include ENGL 101, 102 and 121 or 204; SPCM 101; MATH 111 or 150; FL 101, HIST 101a, 101b, PHIL 103a or 103b; HIST 110; AD 101, HIST 201, MUS 103 or THEA 101; POLS 114; CHEM 106, GEOL 110 or PHYS 101; PLB 115, 117 or ZOOL 115; ANTH 202, HIST 202, 210 or SOC 215; FL 313i, HIST 304i or PHIL 308i; HED 101 or PE 101.

Requirements for Major in Mathematics 39¹

Mathematics 150, 250, 251 or 305 (3) + 8

Mathematics 221 3

A student may take some of the above courses by proficiency examination.

Computer Science 202 or approved substitute 3

Mathematics 311, 319, (or 419), 335, and 352 (or 452) 13

Mathematics 319e and 352e; or Mathematics 302 2-3

At least 3 additional mathematics courses numbered above 399 9

(At least one course in probability and statistics must be included in the student's program.)

Education Requirements 34

Professional Education Requirements 28

See Teacher Education Program.

Additional Courses for Teacher Certification	6
Psychology 102, Science elective-3	
Electives	6
Total	120

¹Numbers in parenthesis are hours which may be substituted into the University Core Curriculum.

Unconditional admission into the Teacher Education Program in mathematics requires a 2.5 average in Mathematics 150, 250, 251 or 305 and 221. Retention in the Teacher Education Program and approval for student teaching requires a 2.5 average in the major (excluding Mathematics 311, 314 and 400) and departmental approval.

Approval for student teaching also requires a grade of C or better in Mathematics 311 and a 2.25 average in mathematics courses numbered above 299, including a grade of C or better in at least four other mathematics courses not including Mathematics 314 or 400. Students with a minor in mathematics must also meet this requirement to student teach in mathematics.

College of Education Mathematics Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
MATH 150, 250	4	4	MATH 305 or 251.....	3	-
MATH 221	-	3	MATH 302, 335	3	3
ENGL 101, 102	3	3	CS 202.....	-	3
POLS 114.....	3	-	Science Core ¹	3	-
Science Core ¹	3	-	Science Elective ¹	-	3
Fine Arts ¹	3	-	HIST 110.....	3	-
HED 101 or PE 101	-	2	ENGL 121 or 204.....	3	-
PSYC 102.....	-	3	Humanities Core ¹	-	3
			EDUC 311	-	2
			EDUC 314	-	2
Total.....	16	15	Total.....	15	16
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
MATH 319, 352	6	-	MATH 311	4	-
MATH 483.....	-	4	MATH 400-Level ²	3	-
MATH 400-Level ²	-	3	EDUC 316	2	-
EDUC 308	-	3	EDUC 317	2	-
EDUC 310	2	-	EDUC 401	-	12
EDUC 315	3	-	Interdisciplinary ¹	3	-
SPCM 101.....	3	-			
Multicultural	-	3			
Elective.....	2	3			
Total.....	16	16	Total.....	14	12

¹Consult with College of Education academic advisor for appropriate course
²Must be approved by mathematics department advisor

Minor

A non-teaching minor consists of Mathematics 150, or 140, or equivalent and 12 hours of mathematics credit at the 200 level or above, including at least one course at the 400 level (excluding 311, 314, 400, 411, 412, 457, and 458). Courses should be approved by a mathematics departmental adviser. Elementary and secondary education students interested in a mathematics minor should see a mathematics departmental education adviser to obtain a current list of specific requirements. A grade of C or better must be earned in all courses used to meet minor requirements.

Honors

Mathematics 395 and 495 are used for individual honors work for upper level undergraduates in mathematics.

Placement

In addition to having taken the prerequisite mathematics, new students are required to present a satisfactory placement score as a condition for registration in mathematics courses. Contact the Department of Mathematics for current information regarding placement.

Mathematics Faculty

Beckemeyer, Imogene C., Assistant Professor, *Emerita*, M.A., Southern Illinois University, 1952.

Bhattacharya, Bhaskar, Assistant Professor, Ph.D., University of Iowa, 1993.

Budzban, Gregory, Assistant Professor, Ph.D., University of South Florida, 1991.

Burton, T. A., Professor, Ph.D., Washington State University, 1964.

Chen, Pei-Li, Associate Professor, Ph.D., State University of New York at Buffalo, 1988.

Clark, Lane, Associate Professor, Ph.D., University of New Mexico, 1980.

Crenshaw, James, Associate Professor, *Emeritus*, Ph.D., University of Illinois, 1967.

Danhof, Kenneth, Professor, Ph.D., Purdue University, 1969.

Dharmadhikari, Sudhakar, Professor, Ph.D., University of California at Berkeley, 1962.

Earnest, Andrew, Professor, Ph.D., Ohio State University, 1975.

Elston, George, Assistant Professor, *Emeritus*, M.S., University of Wisconsin, 1949.

Feinsilver, Philip, Professor, Ph.D., New York University (Courant), 1975.

Fitzgerald, Robert W., Professor, Ph.D., University of California at Los Angeles, 1980.

Foland, Neal E., Professor, *Emeritus*, Ph.D., University of Missouri, 1961.

Gates, Leslie D., Associate Professor, *Emeritus*, Ph.D., Iowa State University, 1952.

Gregory, John, Professor, Ph.D., University of California at Los Angeles, 1969.

Grimmer, Ronald C., Professor, Ph.D., University of Iowa, 1967.

Hall, Dilla, Associate Professor, *Emeritus*, Ph.D., St. Louis University, 1955.

Hooker, John W., Professor, Ph.D., University of Oklahoma, 1967.

Hughes, Harry R., Associate Professor, Ph.D., Northwestern University, 1988.

Hunsaker, Worthen N., Professor, Ph.D., Washington State University, 1966.

Jeyaratnam, Sakthivel, Professor, Ph.D., Colorado State University, 1978.

Kammler, David, Professor, Ph.D., University of Michigan, 1971.

Kim, Henry, Assistant Professor, Ph.D., University of Chicago, 1992.

Kirk, Ronald B., Professor and *Chair*, Ph.D., California Institute of Technology, 1968.

Koch, Charles, Assistant Professor, *Emeritus*, Ph.D., University of Illinois, 1961.

Langenhop, Carl E., Professor, *Emeritus*, Ph.D., Iowa State University, 1948.

Lei, Junjiang, Assistant Professor, Ph.D., University of Oregon, 1991.

Mark, Abraham M., Professor, *Emeritus*, Ph.D., Cornell University, 1947.

Maxwell, Charles, Professor, *Emeritus*, Ph.D., University of Illinois, 1955.

Mohammed, Salah-Eldin A., Professor, Ph.D., University of Warwick (England), 1976.

Moore, Robert A., Associate Professor, *Emeritus*, Ph.D., Indiana University, 1961.

Neuman, Edward G., Professor, Ph.D., University of Wroclaw (Poland), 1972.

Olmsted, John M. H., Professor, *Emeritus*, Ph.D., Princeton University, 1940.

Paine, Thomas B., Assistant Professor, *Emeritus*, Ph.D., University of Oregon at Eugene, 1966.

Panchapakesan, S., Professor, Ph.D., Purdue University, 1969.

Parker, George D., Associate Professor, Ph.D., University of California at San Diego, 1971.

Patula, William T., Professor, Ph.D., Carnegie-Mellon University, 1971.

Pedersen, Franklin D., Associate Professor, *Emeritus*, Ph.D., Tulane University, 1967.

Pericak-Spector, Kathleen, Associate Professor, Ph.D., Carnegie-Mellon University, 1980.

Porter, Thomas D., Associate Professor, Ph.D., University of New Mexico, 1990.

Redmond, Donald, Associate Professor, Ph.D., University of Illinois, 1976.

Skalsky, Michael, Professor, *Emeritus*, D.Nat.Sc., University of Gottingen, 1949.

Slechticky, James L., Instructor, *Emeritus*, M.S. Washington University, 1940.

Snyder, Herbert H., Professor, *Emeritus*, Ph.D., Lehigh University, 1965, Ph.D., University of South Africa, 1971.

Spector, Scott J., Professor, Ph.D., Carnegie-Mellon University, 1978.

Sullivan, Michael, Assistant Professor, Ph.D., University of Texas at Austin, 1992.

Wallis, Walter, Professor, Ph.D., University of Sydney, 1968.

Wilson, Joseph C., Professor, *Emeritus*, Ph.D., Louisiana State University, 1954.

Wright, Mary H., Professor, Ph.D., McGill University (Montreal), 1977.

Yucas, Joseph, Professor, Ph.D., Pennsylvania State University, 1978.

Zeman, Marvin, Professor, Ph.D., New York University (Courant Institute), 1974.

Microbiology (Department, Major, Courses)

Microbiology is the study of microorganisms, a large and diverse group of organisms that exist as single cells or cell clusters. The science of microbiology includes the study of microbial growth, biochemistry, genetics and ecology and the relationship of microorganisms to other organisms including humans. As a basic biological science, microbiology provides some of the most accessible research tools for probing the nature of life processes. Our sophisticated understanding of the chemical and physical principles governing life has developed from studies of microorganisms. As an applied biological science, microbiology deals with many important practical problems in medicine, agriculture, biodegradation and food industries, and is at the heart of biotechnology industries. Students pursuing a major in microbiology will have an opportunity to take coursework related to these important areas. Chemistry is also an integral part of modern microbiology. Therefore, general and organic chemistry are required for the microbiology major. The chemistry courses required for the microbiology degree satisfy the requirements for a chemistry minor. In addition, opportunities for undergraduate research in microbial biochemistry, genetics and diversity, as well as in immunology and molecular biology are available for outstanding undergraduate students. The microbiology major, chemistry minor and undergraduate research options are strong assets for students who seek careers in health care professions or industrial microbiology, or who seek graduate training in microbiology or related disciplines.

The following program of study prepares students for research or teaching positions after the bachelor's degree or for advanced study in graduate programs in microbiology, molecular biology or cell biology. A grade of C or better must be earned in Microbiology 301 and 302 to fulfill degree requirements. An overall grade point average of 2.00 or better for all microbiology courses is required to satisfy degree requirements.

Bachelor of Arts Degree, College of Science

University Core Curriculum Requirements	41 ¹
College of Science Academic Requirements	6
Supportive skills coursework consisting of a minimum of six semester hours selected from: Computer Science 200, 201, 202, 212; English 291, 491; Mathematics 282 or 283 or Plant Biology 360; any two-semester sequence of one of the following foreign languages: 200-level French, German, Japanese, Russian or Spanish.	
Requirements for Major in Microbiology	68
Biology 200a,b	6 ²
Microbiology 301, 302, 403, 460, 480, 481 and 495	22
Microbiology electives	12
Senior level work consisting of lecture courses selected from: 421, 425, 453, 454, 470	
Chemistry 200, 201, 210, 211, 340, 341 and 342	16 ²
Mathematics 141 or 150	4 ²
Physics 203a,b and 253a,b	8 ²
Electives	5
Total	120

¹The 41 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for University Core Curriculum requirements.

²These courses meet the College of Science requirements for biological sciences, physical sciences and mathematics.

Microbiology Suggested Curricular Guide

FIRST YEAR		FALL	SPRING	SECOND YEAR		FALL	SPRING
BIOL 200a,b		3	3	CHEM 340, 341		5	-
CHEM 200, 201		4	-	CHEM 342		-	3
CHEM 210, 211		-	4	CS 201		-	3
ENGL 101, 102		3	3	MATH 141		4	-
Fine Arts		-	3	Humanities		-	3
MATH 108, 109		3	3	MICR 301, 302		4	3
				SPCM 101		3	-
				Social Science		-	3
<i>Total</i>		13	16	<i>Total</i>		16	15
THIRD YEAR		FALL	SPRING	FOURTH YEAR		FALL	SPRING
Human Health		2	-	MICR 421 or 425		3	-
Interdisciplinary		-	3	MICR 453		-	3
Humanities		3	-	MICR 425 or 454		3	-
MATH 282		-	3	MICR 470		-	3
MICR 460, 403		3	3	MICR 480, 481		4	4
PHYS 203a, 253a		4	-	MICR 495		-	1
PHYS 203b, 253b		-	4	Multicultural		3	-
Social Science		3	-	Elective		2	-
Elective		-	3				
<i>Total</i>		15	16	<i>Total</i>		15	14

Minor

A minor in microbiology consists of 16 semester hours, to include 301, 302, and other courses determined by the student in consultation with the microbiology adviser.

Microbiology Faculty

Achenbach, Laurie A., Assistant Professor, Ph.D., University of Illinois, 1988.

Borgia, Peter, Professor, Ph.D., University of Illinois, 1973.

Brewer, Gregory, Professor, Ph.D., University of California, 1972.

Caster, John, Assistant Professor, Ph.D., St. Louis University, 1968.

Clark, David P., Professor, Ph.D., University of Bristol (England), 1976.

Cooper, Morris D., Professor, Ph.D., University of Georgia at Athens, 1971.

Fix, Douglas F., Associate Professor, Ph.D., Indiana University, 1983.

Haddock, John D., Assistant Professor, Ph.D., Virginia Polytechnic Institute and State University, 1990.

Jackson, Robert, Professor, Ph.D., Purdue University, 1963.

Madigan, Michael T., Professor, Ph.D., University of Wisconsin, 1976.

Marcuzzi, Adriana B., Assistant Professor, Ph.D., University of Rosario (Argentina), 1979.

Maroun, Leonard E., Professor, Ph.D., Catholic University, 1970.

Martinko, John M., Associate Professor and Chair, Ph.D., State University of New York at Buffalo, 1978.

Moticka, Edward A., Professor, Ph.D., University of Illinois at the Medical Center, 1970.

Myers, Walter L., Professor, D.V.M., Ph.D., University of Wisconsin, 1961.

Parker, Jack, Professor and Dean, Ph.D., Purdue University, 1973.

Rouhandeh, Hassan, Professor, *Emeritus*, Ph.D., Kansas State University, 1959.

Rowan, Dighton F., Professor, *Emeritus*, Ph.D., Stanford University, 1954.

Shechmeister, Isaac L., Professor, *Emeritus*, Ph.D., University of California at Berkeley, 1949.

Tewari, Ram, Professor, D.V.M., Agra University, India, 1960; Ph.D., Ohio State University, 1966.

Watabe, Kounosuke, Associate Professor, Ph.D., Kyoto University, Japan, 1981.

Physics (Department, Major, Courses)

The undergraduate major in physics leading to the Bachelor of Science degree provides for a mastery of basic principles and methods of classical and modern physics and prepares the student for a wide variety of career opportunities. A degree in physics can lead to a challenging and interesting career. Physics as a profession has always been at the center of exciting discoveries, and much of modern science is

originally based on the research done by physicists. The outlook for the future appears even more challenging.

The Physics Department at SIUC offers a first-rate undergraduate program in physics. Individual attention is provided to physics majors. We offer advanced laboratory courses in modern physics, digital and analog electronics, acoustics, and lasers and modern optics. Most importantly, the Department of Physics is research-oriented with all of its faculty active in research. Participation by advanced undergraduates in the research program of a faculty member is encouraged and can be very useful to students, providing them with technical skills not available through formal coursework and giving them a taste of *real* physics. The physics faculty at Southern Illinois University at Carbondale is engaged in a wide range of research activities in both experimental and theoretical physics. Our undergraduates can participate in experimental projects in such areas as nuclear magnetic resonance, low-temperature physics, laser-induced reactions, photo-acoustic microscopy, infrared spectroscopy and electron paramagnetic resonance. For those students who have an interest in theoretical physics, research projects are available in high-interest areas such as quantum physics, solid state physics, atomic and molecular physics, statistical mechanics and nuclear physics.

Employment opportunities in physics are varied and abundant, from industrial research and development to teaching. Physicists are employed in all sectors of society, including corporations, government research agencies and universities. Physicists are presently enjoying unusual opportunities in the development of new concepts that are expected to have far-reaching consequences in the high technology of the future. Totally new applications are arising from understanding basic physics principles. Some of these emerging concepts include laser communications, holography, synchrotron radiation light sources, opto-electronics, high-temperature superconductors and physics applications in medicine. At a time when technological developments and discoveries are creating a heavy demand for physicists, projections indicate the possibility of a critical shortage of trained physicists.

In summary, physics is an exciting field, its graduates are in demand and enjoy high salaries. At SIUC, you have the opportunity to achieve a well-rounded education in becoming a physicist. Students considering a major in physics are urged to consult with the undergraduate adviser of the physics department. An applied physics/experimental physics optional curriculum is provided by selecting from the courses marked with an asterisk in the list of courses required for a major in physics.

Bachelor of Science Degree, College of Science

<i>University Core Curriculum Requirements</i>	41
<i>College of Science Requirements</i>	(6) + 11-12 ¹
Biological Science (not University Core)	(3) + 3 ¹
Mathematics 108, 109 or 111	(3) + 2-3 ¹
Supportive Skills	6
Choose six hours from the following:	
One to two semesters of any foreign language offered at Southern Illinois University at Carbondale	
English 291 or 491 or Management 202 (select only one)	
Computer Science 200 or 202 or 210 or Engineering 222 (select only one)	
Requirements for Major in Physics	(3) + 71 ¹
Chemistry 200, 201, 210, 211	(3) + 5 ¹
Mathematics 150, 250, 251, 305	14
Mathematics 306 or 406 or 407 or 409	3
Physics 205a,b,c and 255a,b,c	12
Physics 301, 310, 320, 345, 410, 420, 430	21

Physics electives chosen from: 324, 328, 424, 425, 428, 431, 432, 445, 450, 458, 470	16
Total	123-124

¹Number in parenthesis are hours which may be substituted into the University Core Curriculum.

Physics Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
ENGL 101, 102.....	3	3	Core Social Science	3	3
PHYS 205a, 255a	4	4	Core Humanities	-	3
MATH 150, 250	4	4	PHYS 205B, 255B.....	4	-
CHEM 200, 201.....	4	-	PHYS 205C, 255C.....	-	4
CHEM 210, 211.....	-	4	MATH 251, 305.....	3	3
Core Humanities.....	3	-	PHYS 301.....	-	3
Human Health	2	-	SPCM 101	3	-
Total	16	15	Fine Arts	3	-
			Total	16	16
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
PHYS 345	3	-	PHYS 430.....	3	-
PHYS 310, 410	3	3	PHYS Elective	6	8-9
PHYS 320, 420	3	3	Biological Science.....	3	-
PHYS Elective.....	-	2-3	Multicultural	3	-
Math Elective.....	3	-	Interdisciplinary	-	3
Biological Science.....	-	3	Free Elective.....	-	3
CS Tools	3	3	Total	15	14-15
Total	15	14-15			

Minor

A minor in physics requires 17 hours and must include Physics 203a,b and 253a,b, or 205a,b and 255a,b as well as 205c and 255c and 5 hours from any 300- or 400-level physics course except Physics 470.

Physics Faculty

Ali, Naushad, Professor, Ph.D., University of Alberta, 1984.

Cutnell, John D., Professor, Ph.D., University of Wisconsin, 1967.

Gruber, Bruno J., Professor, Ph.D., University of Vienna, Austria, 1962.

Hart, Charles F., Associate Professor, Ph.D., University of Texas, 1981.

Henneberger, Walter C., Professor, *Emeritus*, Ph.D., Gottingen University, Germany, 1959.

Johnson, Kenneth W., Professor, Ph.D., Ohio State University, 1967.

Malhotra, Vivak, Professor, Ph.D., Indian Institute of Technology, Kanpur, 1978.

Masden, J. Thomas, Associate Professor, Ph.D., Purdue University, 1983.

Malik, F. Bary, Professor, Ph.D., Gottingen University, West Germany, 1958.

Migone, Aldo, Professor, Ph.D., Pennsylvania State University, 1984.

Nickell, William E., Professor, *Emeritus*, Ph.D., University of Iowa, 1954.

Sanders, Frank C., Associate Professor, Ph.D., University of Texas, 1968.

Saporoschenko, Mykola, Professor, Ph.D., Washington University, 1958.

Tao, Rongjia, Professor, Ph.D., Columbia University, 1982.

Watson, Richard E., Professor, *Emeritus*, Ph.D., University of Illinois, 1938.

Physiology (Department, Major, Courses)

The Department of Physiology offers training in mammalian, cellular and comparative physiology, pharmacology, biophysics, and human anatomy. Students majoring in physiology are encouraged to gain research experience under faculty supervision. The undergraduate major provides general rather than specialized training in physiology. To become a professional physiologist usually requires the completion of an advanced degree in the field. An undergraduate major in physiology would provide an excellent foundation for those planning a career in teaching or re-

search or a medical field such as medicine, dentistry, veterinary science, nursing or medical technology. Students considering a major in Physiology should discuss their program with the undergraduate adviser in the Department of Physiology.

Bachelor of Arts Degree, College of Science

University Core Curriculum Requirements	41
College of Science Requirements	6
Supportive Skills to include foreign language (200 level both semesters), or two from English 291 or 491, Plant Biology 360 or Mathematics 282, 283, Computer Science 201, 202, 212,	
Requirements for Major in Physiology	(11) + 58 ¹
Physiology 410a,b	10
Physiology electives (300 or 400-level)	(2) + 12
Biology 200a,b and two of 305, 307, 308, 309	(3) + 9
Chemistry 200, 201, 210, 211, 340, 341, 350 (with lab)	(3) + 14
Physics 203a,b; 253a,b	8
Mathematics 150, 250	(3) + 5
Electives	15
Total	120

¹Numbers in parenthesis are hours which may be substituted into the University Core Curriculum. These courses also satisfy the College of Science requirements in Biological Sciences, Physical Sciences and Mathematics.

Physiology Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
BIOL 200b	-	3	BIOL 200a, 300-level	3	3
CHEM 200, 201	4	-	Humanities	-	3
CHEM 210, 211	-	4	MATH 150, 250	4	4
ENGL 101, 102	3	3	PHSL 492	1	1
MATH 108, 109	3	3	PHYS 203a, 253a	4	-
Social Science	3	3	PHYS 203b, 253b	-	4
Elective	2	-	SPCM 101	3	-
Total	15	16	Total	15	15
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
BIOL 300-level	-	3	Interdisciplinary	3	-
CHEM 340, 341	5	-	PHSL 410a,b	5	5
CHEM 350	-	4	PHSL Elective	3	2
Fine Arts	3	-	Supportive Skill	3	3
Humanities	3	-	Elective	-	5
Multicultural	-	3			
PHSL 310, 301	5	4			
Total	16	14	Total	14	15

Minor

A minor in physiology requires completion, with at least a C grade, of Physiology 410 (10 hours) and six hours of 300 or 400-level courses offered by the department.

Junior-Senior Honors Program

Juniors who have shown outstanding ability in biology courses and related subjects in their freshman and sophomore years may apply for acceptance into the honors program. Honors students do independent study in the physiological sciences (Physiology 491) during their junior and senior years.

Physiology Faculty

Banerjee, Chandra M., Professor, M.D., University of Calcutta, 1959; Ph.D., Medical School of Virginia, Richmond, 1967.

Bartke, Andrzej, Professor and Chair, Ph.D., University of Kansas, 1965.

Brown, Sara W., Instructor, M.S., Southern Illinois University at Carbondale, 1983.

Browning, Ronald A., Professor, Ph.D., University of Illinois Medical Center, Chicago, 1971.

Collard, Michael W., Assistant Professor, Ph.D., Washington State University, 1987.

Coulson, Richard L., Professor, Ph.D., University of Toronto, 1971.

Cox, Thomas C., Associate Professor, Ph.D., Arizona State University, 1979.

Dunagan, Tommy T., Professor, Ph.D., Purdue University, 1960.

Ellert, Martha S., Associate Professor, Ph.D., University of Miami, 1967.

Falvo, Richard E., Professor, Ph.D., University of Wyoming, 1970.

Ferraro, James S., Associate Professor, Ph.D., The Chicago Medical School, 1984.

Huggenvik, Jodi I., Assistant Professor, Ph.D., Washington State University, 1985.

Hunter, William S., Associate Professor, Ph.D., Michigan State University, 1971.

Johnson, Anne K., Instructor, M.S., Ohio State University, 1962.

Miller, Donald M., Professor, *Emeritus*, Ph.D., University of Illinois, Champaign-Urbana, 1965.

Murphy, Laura L., Assistant Professor, Ph.D., Medical College of Georgia, 1983.

Myers, J. Hurley, Professor, Ph.D., University of Tennessee, Health Science Center at Memphis, 1969.

Nequin, Lynn G., Associate Professor, Ph.D., University of Illinois, College of Medicine, Chicago, 1970.

Russell, Lonnie D., Professor, Ph.D., University of Nebraska, 1974.

Shanahan, Michael F., Professor, Ph.D., University of Michigan, 1976.

Sollberger, Arne R., Professor, *Emeritus*, M.D., Karolinska Institute, Sweden, 1957.

Steger, Richard W., Professor, Ph.D., University of Wyoming, 1974.

Wade, David R., Associate Professor, Ph.D., Cambridge University, England, 1967.

Yau, William M., Professor, Ph.D., Medical College of Virginia, 1971.

Plant Biology (Department, Major, Courses)

Plant Biology is the science of plant life, which ranges from the microscopic to giant Sequoia trees. You should consider a major in plant biology if you are curious about any of these: the kinds of plants that inhabit the earth; how they grow; why they are found where they are; and how or what products they contribute to the lives of humans.

A career in plant biology offers a number of specialties from which one may choose. This diversity allows people with different backgrounds, aptitudes and interests to find careers to their liking. A person with mathematical background might find systems ecology or genetics exciting fields. Persons with an appetite for the out-of-doors might be happy as an ecologist, forester, plant explorer, or preservationist of rare and endangered species. Those who appreciate detail and beauty found in plant structure would find happiness in cell study, anatomy and morphology. Someone with an interest in chemistry could become a plant physiologist, plant biochemist or molecular plant biologist. Those who find an interest in aquatic microscopic forms will study algae. Those with an interest in fungi become mycologists. Those who enjoy mosses will study bryology. All of these fields offer great opportunities to interact with people and have a wide range of employment opportunities in teaching, research, and government service.

Students planning to major in plant biology should consult with the chair of the department for information concerning the programs in the department.

As a general rule, students who intend to apply for admission to a graduate school to study for an advanced degree in plant biology should include the following in their undergraduate program: inorganic and organic chemistry, mathematics through calculus, a modern European language, and as many plant biology and biology courses as time and scheduling will permit.

An honors program is available to those juniors and seniors in plant biology who have an overall grade point average of 3.00 or better and an average in plant biology courses of 3.25 or better. Honors students should enroll in Plant Biology 492 during some semester in both junior and senior years.

The department specifies that the College of Science six hour supportive skills requirement is to be met by completing two designated courses or a foreign language sequence. The two designated courses are to be selected from the following: English 291, Computer Science 200, 201, 202, 212. The foreign language requirement can be met by one of the following: (a) passing an eight-hour 100-level sequence in any one foreign language offered at Southern Illinois University at Carbondale; (b) by earning eight hours of 100-level credit in any one foreign language offered at Southern Illinois University at Carbondale by proficiency examination; or (c) completing three years of one foreign language in high school with no grade lower than C.

A student whose native language is not English may use the native language to satisfy part or all of the plant biology foreign language requirement at the University. If the language is presently taught at Southern Illinois University, academic credit may be earned. If the language is not presently taught at the University, no credit is given, but partial or full satisfaction of the plant biology foreign language requirement may be granted if the plant biology department so recommends. A student whose native language is English but who has learned another language not taught at the University may qualify without credit for partial or full satisfaction of the plant biology foreign language requirement under certain circumstances, including formal recommendation by the plant biology department and availability of an examiner and examination materials within the Department of Foreign Languages and Literature. For information, the student should consult the department undergraduate advisor and/or the College of Science advisement center.

Bachelor of Arts Degree, College of Science

University Core Curriculum Requirements	41 ¹
College of Science Academic Requirements	7-11
Supportive Skills,	6-8
Mathematics 108 and 109 or 111 (or its equivalent) or 141	(3) + 1-3
Requirements for Major in Plant Biology	48 ²
Biology 200a, 200b, 305, 306, 307	15 ³
Plant Biology 204, 304, 320	12
Plant Biology Electives	16
Sixteen hours selected from the following with at least one course from each group:	
A. 356, 400, 404, 405, 406, 414, 415, 421	
B. 409, 410, 430, 439, 449, 450, 451, 485	
C. 337, 440, 443, 444, 445, 447, 448	
D. 360, 425a, 425b, 475, 476	
Chemistry 200, 201, 210, 211	(3) + 5 ⁴
Electives	20-24
Electives planned to include courses in computer science, microbiology, physics, statistics and zoology	
Total	120

¹The 41-hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for University Core Curriculum courses.

²Plant Biology requirements satisfy the biological and physical sciences requirements for the College of Science and may be substituted for a maximum of 12 hours in University Core Curriculum courses.

³Plant Biology 200 is recommended for those who want to improve their background in Plant Biology prior to enrolling in Biology 200a, b and for those who wish to earn 3 hours credit toward University Core Curriculum Requirements.

⁴Organic Chemistry is recommended for those interested in plant physiology or graduate study.

Plant Biology Suggested Curricular Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
BIOL 200b	-	3	BIOL 200a, 306.....	3	3
CHEM 200, 201.....	-	4	BIOL 307.....	3	-
ENGL 101, 102.....	3	3	CHEM 210, 211.....	4	-
Human Health	-	2	Fine Arts	-	3
MATH 108, 109	3	3	PLB 304.....	-	4
PLB 200.....	4	-	Social Science.....	-	3
Social Science.....	3	-	SPCM 101	3	-
General Elective	2	-	General Elective	-	3
<i>Total</i>	15	15	<i>Total</i>	13	16
THIRD YEAR	FALL	SPRING	FOURTH YEAR	FALL	SPRING
BIOL 305	3	-	Interdisciplinary.....	-	3
Humanities	3	3	Multicultural.....	3	-
PLB 320, 204.....	4	4	PLB Electives	6	6
PLB Elective.....	-	4	General Electives.....	7	6
Supportive Skill.....	3	3			
General Elective	3	-			
<i>Total</i>	16	14	<i>Total</i>	16	15

Minor

A minor in plant biology consists of a minimum of 16 semester hours, selected from any plant biology offerings except 390, 391, 490, 491, or 492.

Plant Biology Faculty

Ashby, William C., Professor, *Emeritus*, Ph.D., University of Chicago, 1950.

Bozzola, John J., Professor, Ph.D., Southern Illinois University, 1975.

Crandall-Stotler, Barbara C., Professor, Ph.D., University of Cincinnati, 1968.

Gibson, David J., Associate Professor, Ph.D., University of Wales -Bangor, 1984.

Matten, Lawrence C., Professor and *Chair*, Ph.D., Cornell University, 1965.

Middleton, Beth, Associate Professor, Ph.D., Iowa State University, 1989.

Mohlenbrock, Robert H., Distinguished Professor, *Emeritus*, Ph.D., Washington University, 1957.

Nickrent, Daniel L., Associate Professor, Ph.D., Miami University, Ohio, 1984.

Olah, Ladislao V., Professor, *Emeritus*, Ph.D., Stephen Tisza University, Hungary, 1934.

Pappelis, Aristotel J., Professor, Ph.D., Iowa State University, 1957.

Richardson, John A., Associate Professor, M.F.A., Ohio University, 1969.

Robertson, Philip A., Professor, Ph.D., Colorado State University, 1968.

Schmid, Walter E., Professor, Ph.D., University of Wisconsin, 1961.

Stotler, Raymond E., Professor, Ph.D., University of Cincinnati, 1968.

Sundberg, Walter J., Professor, Ph.D., University of California, 1971.

Tindall, Donald R., Professor, Ph.D., University of Louisville, 1966.

Ugent, Donald, Professor, Ph.D., University of Wisconsin, 1966.

Verduin, Jacob, Professor, *Emeritus*, Ph.D., Iowa State University, 1947.

Wood, Andrew J., Assistant Professor, Ph.D., Purdue University, 1994.

Yopp, John H., Professor, Ph.D., University of Louisville, 1969.

Zoology (Department, Major, Minor, Courses)

A major in zoology is an appropriate beginning for those planning a career that includes teaching and research in zoology, conservation, fisheries management and wildlife management, environmental sciences, or the practice of medicine, dentistry, and veterinary science.

Students majoring in zoology are required to develop an individualized curriculum by consulting with the director of undergraduate studies in zoology and an appropriate faculty member of the department.

In the field of zoology, a student may work toward either a Bachelor of Arts or Bachelor of Science degree. The Bachelor of Arts degree with a major in zoology

permits a student to take 21-24 semester hours of courses in other areas of interest. Having obtained a Bachelor of Arts degree, students may continue their education toward a graduate degree in zoology or related field, although it may be necessary to absolve deficiencies in physics, organic chemistry and mathematics.

The Bachelor of Science degree with a major in zoology permits a student to take 8-13 semester hours of courses in other areas of interest. This degree requires additional courses in chemistry and/or physics and quantitative science (mathematics, statistics, or computer programming) and will normally be pursued by students desiring to do graduate work in zoology or other specialized training such as medicine, dentistry, or veterinary science.

The individualized curriculum for the Bachelor of Arts degree in zoology must include: (1) a year of chemistry with laboratory or a year of physics with laboratory (this requirement may be satisfied with Chemistry 200, 201, 210, 211 or Chemistry 200, 201, 340, 341 or Chemistry 140a,b or Physics 203a,b, 253a,b); (2) one course in mathematics beyond Mathematics 108 and 109 or 111 (this requirement may be satisfied with Mathematics 141, 150, 282, 283, Plant Biology 360, Computer Science 200, 202 or 210); (3) Biology 200a,b, 305 and 307; (4) Zoology 220a, 220b, 300 (or Biology 309), Zoology 482 and at least 18 (19 if Biology 309 is used) additional semester hours of electives in zoology. A minimum of 41 semester hours of biology and zoology must be completed for the major, and no more than 11 semester hours of courses (biology or zoology) which are used to satisfy degree requirements of another major may be used to meet the zoology requirements.

Bachelor of Science degree requirements include all requirements for a Bachelor of Arts degree in zoology, plus two additional courses selected from chemistry with laboratory and/or physics with laboratory, and one additional course in mathematics selected from either calculus, computer programming or statistics.

Bachelor of Arts Degree, College of Science

<i>University Core Curriculum Requirements</i>	41
<i>College of Science Academic Requirements</i>	7-11
Mathematics 108 and 109 or 111 or 141	(3) + 1-3 ¹
Supportive Skills: at least six credit hours chosen from Mathematics 282 or 283 or Plant Biology 360; Computer Science 200, 201, 202, 212; English 291 or 491 or Applied Sciences and Arts 102; any two-semester sequence of a foreign language (Chinese, French, German, Japanese, Russian, Spanish) ²	6-8
<i>Requirements for Major in Zoology</i>	46-47
Biology 200a,b	(3) + 3 ¹
Biology 305, 307	6
Zoology 220a,b, and 482	7
Zoology 300 or Biology 309	3-4
Zoology electives from Individualized Curriculum	18-19
Chemistry and/or Physics (one year sequence with laboratory)	(3) + 5 ¹
A course in mathematics (beyond Mathematics 108 and 109 or 111), statistics and/or computer programming in FORTRAN, Pascal or C language ³	3-4
<i>Electives</i>	<u>23-24</u>
<i>Total</i>	120

Bachelor of Science Degree, College of Science

<i>University Core Curriculum Requirements</i>	41
<i>College of Science Academic Requirements</i>	7-11
Mathematics 108 and 109 or 111 or 141	(3) + 1-3 ¹

Supportive Skills: at least six credit hours from Mathematics 282 or 283 or Plant Biology 360; Computer Science 200, 201, 202, 212; English 291 or 491 or Applied Sciences and Arts 102; any two-semester sequence of a modern foreign language (Chinese, French German, Japanese, Russian, Spanish)² 6-8

Requirements for Major in Zoology	57-60
Biology 200a,b	(3) + 3 ¹
Biology 305, 307	6
Zoology 220a,b, and 482	7
Zoology 300 or Biology 309	3-4
Zoology electives from Individualized Curriculum	18-19
Chemistry and/or Physics (two years with laboratory)	(3) + 13-15 ¹
Two courses in mathematics (beyond Mathematics 108 and 109 or 111), statistics and/or computer programming in FORTRAN, Pascal or C language.	6-7
Electives	10-13
Total	120

¹Numbers in parenthesis are hours which may be substituted for the University Core Curriculum requirement
²The foreign language requirement can also be met by one of the following: (a) by earning eight hours of 100-level credit in one language by proficiency examination; or, (b) completing three years of one language in high school with no grade lower than C.
³Courses used to satisfy the supportive skills requirement may not be used to satisfy the mathematics requirement. Only one of Mathematics 282, 283 and Plant Biology 360 may be counted towards the supportive skills or mathematics requirements.

Bachelor of Science Degree, College of Education

The degree is taken in the College of Education and must satisfy all requirements of that college for the Bachelor of Science degree. The requirements for the major in zoology are the same as those for either the Bachelor of Arts or Bachelor of Science in the College of Science, except that to meet teacher certification requirements a minor in plant biology is required. Curriculum and Instruction 468 is also required. College of Education professional education and other certification requirements may be found in the section of this catalog titled Curriculum and Instruction. See Teacher Education Program.

Zoology Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
ENGL 101, 102.....	3	3	BIOL 200a,b.....	3	3
Human Health	2	-	CHEM 200, 201.....	4	-
Fine Arts.....	-	3	CHEM 210, 211.....	-	4
MATH 108, 109	3	3	ENGL 291.....	-	3
Social Science.....	3	3	MATH 141.....	4	-
ZOOL 118	4	-	Humanities	-	3
ZOOL 220b	-	3	SPCM 101	3	-
			Elective	-	2
Total	15	15	Total	14	15
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
BIOL 307	-	3	BIOL 305.....	3	-
CHEM 340, 341.....	5	-	CS 201	-	3
CHEM 350.....	-	4	Interdisciplinary	3	-
Humanities	3	-	ZOOL 482.....	-	1
Multicultural	-	3	ZOOL 300-level	4	-
PLB 360.....	-	3	ZOOL 400-level	6	6
ZOOL 220a	3	-	Electives.....	-	5
ZOOL 400-level.....	3	3			
Total	14	16	Total	16	15

Minor

A minor in zoology consists of 16 hours, including 220a,b, and 482. Zoology courses acceptable for majors as well as Biology 305, 306, 307, 308, and 309 may be used to complete the 16-hour minimum requirement; no University Core Curriculum courses can be included. Courses used to satisfy degree requirements for a major or another minor cannot be used for the minor in zoology.

Honors Program

An honors program is available to those juniors and seniors in zoology who maintain a grade point average of 3.25 or better, overall and in the major. To enroll in Zoology 493, the student must complete a departmental form that requires the project title; a description of the proposed project; and the signatures of the student, the faculty adviser, and the chair of the department. The student must complete six hours of 493 with a grade of *B* or better, file with the department a final report on the research, and present the results at a public seminar in order to graduate with departmental honors in zoology. At the time of graduation, an indication of participation in the program is made on the diploma and transcript for students who complete the requirements. Concurrent participation in the University Honors Program is encouraged. Students receiving credit for Zoology 493 may not apply Zoology 393 hours toward the major.

Zoology Faculty

Anthony, Terence R., Associate Professor, M.D., Ph.D., University of Chicago, 1968, 1975.

Beatty, Joseph A., Associate Professor, Ph.D., Harvard University, 1969.

Billington, Neil, Assistant Professor, Ph.D., Loughborough University of Technology, England, 1985.

Blackwelder, Richard E., Professor, *Emeritus*, Ph.D., Stanford University, 1934.

Brandon, Ronald A., Professor, Ph.D., University of Illinois, 1962.

Breen, Thomas R., Assistant Professor, Ph.D., University of North Carolina, 1985.

Burr, Brooks M., Professor, Ph.D., University of Illinois, 1977.

Drickamer, Lee C., Professor, Ph.D., Michigan State University, 1970.

Dyer, William G., Professor, Ph.D., Colorado State University, 1965.

Englert, DuWayne C., Professor, Ph.D., Purdue University, 1964.

Feldhamer, George A., Associate Professor, Oregon State University, 1977.

Garoian, George, Professor, *Emeritus*, Ph.D., University of Illinois, 1956.

Gates, Robert J., Associate Professor, Ph.D., Southern Illinois University, 1989.

Halbrook, Richard S., Assistant Professor, Ph.D., Virginia Polytechnic Institute and State University, 1990.

Heidinger, Roy C., Professor, Ph.D., Southern Illinois University, 1970.

King, David, Associate Professor, Ph.D., University of California at San Diego, 1975.

Kohler, Christopher C., Professor, Ph.D., Virginia Polytechnic Institute and State University, 1980.

Krajewski, Carey, Associate Professor, Ph.D., University of Wisconsin, 1988.

LeFebvre, Eugene A., Associate Professor, *Emeritus*, Ph.D., University of Minnesota, 1962.

Lewis, William M., Professor, *Emeritus*, Ph.D., Iowa State University, 1949.

Martan, Jan, Professor, *Emeritus*, Ph.D., University of Oregon, 1963.

McPherson, John E., Jr., Professor, Ph.D., Michigan State University, 1968.

Muhlach, William L., Associate Professor and *Chair*, Ph.D., University of Illinois at Chicago, 1986.

Newman, Jonathan A., Assistant Professor, Ph.D., State University of New York at Albany, 1990.

Sheehan, Robert J., Associate Professor, Ph.D., Southern Illinois University, 1984.

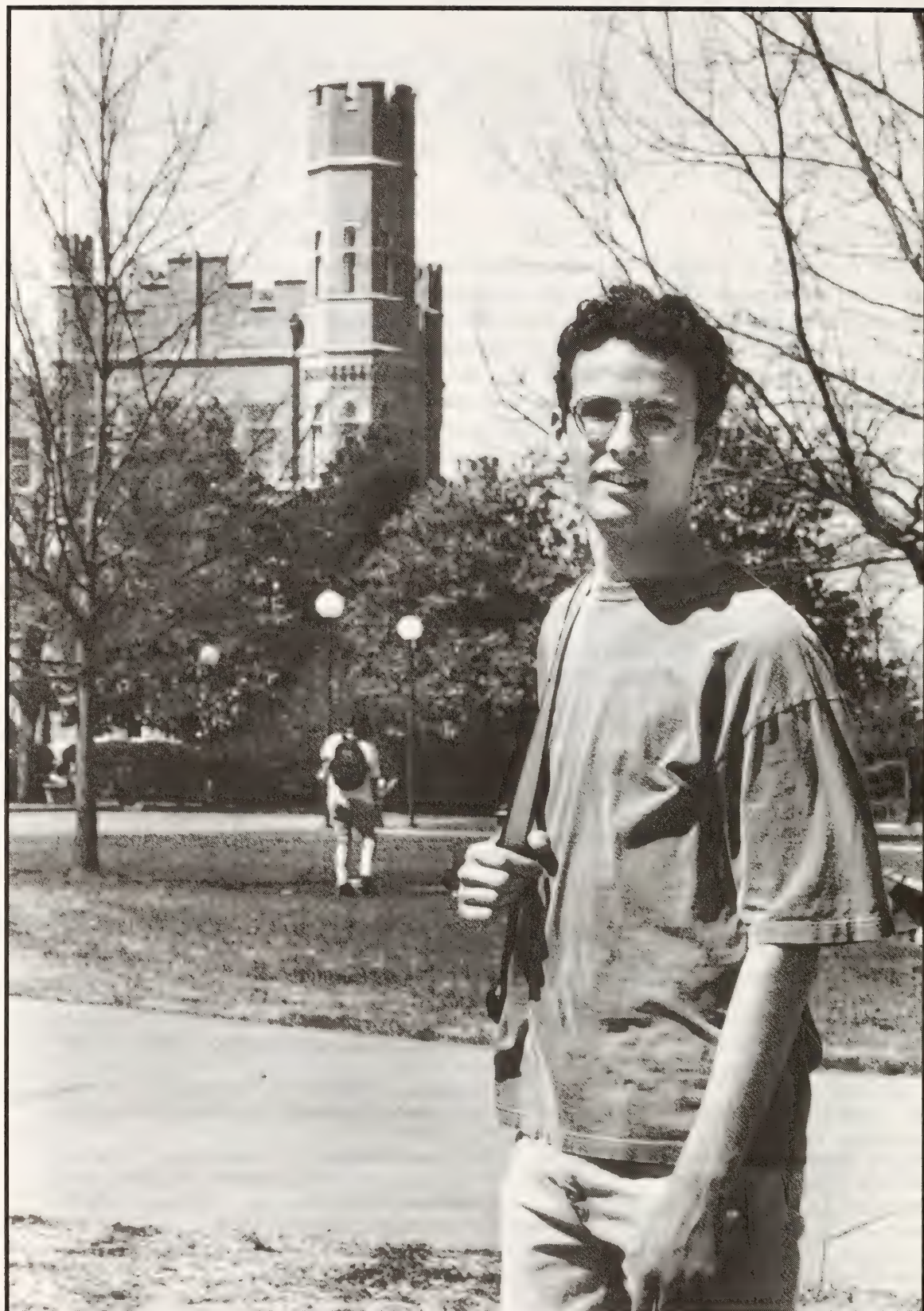
Shepherd, Benjamin A., Professor, Ph.D., Kansas State University, 1970.

Stahl, John B., Associate Professor, Ph.D., Indiana University, 1958.

Stains, Howard J., Professor, *Emeritus*, Ph.D., University of Kansas, 1955.

Waring, George H., Professor, Ph.D., Colorado State University, 1966.

Woolf, Alan, Professor, Ph.D., Cornell University, 1972.



School of Social Work

Martin B. Tracy, *Director*

The undergraduate social work program offers a professional social work curriculum designed to prepare students for beginning social work practice. The program focuses on direct services and leads to a Bachelor of Science degree with a major in social work.

Social work offers stimulating and challenging career opportunities that are expected to increase into the next century; this reflects public and private response to the social service needs of a growing and aging population and to stresses caused by social change. Social workers hold jobs in state or local government agencies, children and family services, mental health, medical care, housing, education and corrections. Those in the private sector work primarily for voluntary nonprofit agencies, community and religious organizations, hospitals, nursing homes and health agencies. The social work profession is committed to maximizing opportunities for minority and disadvantaged populations and this commitment is reflected throughout the social work program.

The undergraduate curriculum provides an interdisciplinary approach (grounded in the liberal arts) to understanding the relationship of people with their social and community environments. The practice courses provide basic social work skills for prevention and treatment of a variety of human problems. Course content integrates human behavior with the social environment and focuses on ethnic and minority issues, service delivery issues in rural areas, and the effects of discrimination and poverty on populations-at-risk. Experiential learning (simulations, role playing, volunteer experience) is an integral part of the curriculum.

A unique aspect of social work education is an intensive field practicum. The practicum will guide students from the classroom into the settings and situations they will encounter as professionals. During the practicum, which will occupy one semester full-time, students will work in an approved agency chosen from among private or public agencies in settings such as mental health and developmental disabilities, child welfare, public health, hospitals, corrections, youth services, group services, crisis intervention, and social planning. Agencies may be located in rural areas, small towns, or cities, and their clients may be infants, children, adolescents, adults or the aged. During the practicum students will participate in a required seminar in which they will discuss their work, share their experiences, examine issues of ethics and professionalism, and develop intervention strategies. The remainder of time in the social work program can be devoted to a minor in a related field or to courses selected to meet individual interests or career goals.

Accreditation. The undergraduate Social Work Program is fully accredited by the Council of Social Work Education, the nationally recognized accrediting agency for social work. Graduation from an accredited program gives students an advantage both in the job market and in pursuit of graduate education. Many graduate programs in social work will give advanced standing to students who have completed an accredited bachelor's degree in social work. For requirements for the graduate degree in social work, see the Graduate Catalog.

Admissions. To be accepted into the pre-social work program beginning freshmen and sophomores must meet the university requirements for admission. In calculating a student's grade point average for admission purposes for new, continuing and re-entering students, the admission office will follow the SIUC grading policy and procedures for all collegiate work attempted at SIUC and other collegiate institutions.

Beginning freshmen and sophomores who qualify for admission to the University and the School of Social Work are granted admission with a pre-social work classification. Pre-social work students must have a cumulative grade point average and a transfer grade point average (if applicable) of 2.25 (on a 4.0 scale). Pre-social work students are advised by a social work academic adviser for the purpose of completing the courses required to become a social work major. To be considered for a social work major, students must complete 56 semester hours with an overall grade point average of 2.5 (on a 4.0 scale). In addition, students must complete satisfactorily the following University Core Curriculum courses: Plant Biology 115 or Zoology 115, Sociology 108, Psychology 102, Political Science 114 and Economics 113. Students must also achieve a grade of C or higher in social work courses 275 and 383. Social Work 275 and 383 may not be repeated for eligibility to the major.

Transfer students who have completed fewer than 26 hours must meet the admission requirements of beginning freshman as well as have an overall 2.25 grade point average (on a 4.0 scale) from all post-secondary institutions attended. Students who have completed more than 26 semester hours must have an overall transfer grade point average of 2.25 to be admitted with a pre-social work classification. Students will be considered for the social work major when they have completed 56 semester hours and earned an overall grade point average of 2.5; completed the following University Core Curriculum courses or their substitutes: Plant Biology 115 or Zoology 115, Sociology 108, Psychology 102, Political Science 114 and Economics 113; and complete social work courses 275 and 383 with a grade of C or higher. Social Work 275 and 383 may not be repeated for eligibility to the social work major.

Students who are currently enrolled or previous SIUC students in a major other than social work, may request admission to the School of Social Work with a pre-social work classification, provided they have an overall SIUC grade point average of 2.25. To be considered for admission as a social work major, re-entering and currently enrolled students must have completed 56 semester hours with a grade point average of 2.5; completed social work courses 275 and 383 with a grade of C or higher; and completed the following University Core Curriculum courses or their substitutes; Plant Biology 115 or Zoology 115, Sociology 108, Psychology 102, Political Science 114 and Economics 113.

Student Advisement. Students in social work have access both to the academic adviser and to a faculty adviser. Help is offered in course selection and registration, in long range planning for the degree program and career information. Students are encouraged to meet with their adviser on a regular basis.

Requirements for the Degree. The program leads to the Bachelor of Science degree with a major in social work. In addition to 41 semester hours of University Core Curriculum courses, majors must also complete a minimum of 60 hours of undergraduate social work requirements. Students are also required to take 19 semester hours of general university electives for a total of 120 semester hours for the Bachelor of Science in Social Work degree.

Class Availability for Non-Social Work Students. Non-social work students may register for the following social work courses: 275, 383, 291, 400a, 421, 350a, 350b, 350c, 361, 363 and 366.

Course Sequencing. It is of the utmost importance that required social work courses be sequenced properly. Therefore, all courses must be approved by the student's academic and professional advisers. Courses on the 400 level are reserved for juniors and seniors.

Retention Policy. Students admitted to the School of Social Work will be required to fulfill the School’s scholastic standards . All students with a pre-social work classification must achieve a cumulative SIUC grade point average of 2.25 in every semester to remain in the program. Social work courses 275 and 383 must be completed with a grade of C or higher. Social work 275 and 383 may not be repeated for the eligibility to the major.

Students admitted to the social work major must maintain a 2.5 SIUC cumulative grade point average in every semester to remain in the social work program. In addition, social work majors must maintain at least a 2.5 grade point average in the core social work curriculum to qualify for field practicum. No more than two social work core courses may be taken. Students who fail to meet these retention requirements will be subject to collegiate dismissal from the School of Social Work. A student who has been placed on collegiate dismissal will be transferred to Pre-Major Advisement or may seek transfer to another university program if the student has a cumulative SIUC grade point average of 2.0.

Social Work (Major, Courses)

The course of study consists of three major components: (1) required University Core curriculum course work; (2) required social work major; (3) general university electives. The University’s core curriculum program, required of all students pursuing a bachelor’s degree, is a carefully balanced series of courses in the sciences, social sciences, humanities, fine arts, English and communication skills, mathematics, health, and integrative studies. The university core curriculum courses in sociology and psychology are particularly relevant to the social work major.

The social work requirements in the curriculum include courses that define the role of the profession as it relates to society, politics, and the economy; that provide the conceptual framework to address problems and changed circumstances for individuals, families, groups, and communities; and that examine the structure, functions, policies, programs, and strategies of the social welfare system. Methods courses cover interviewing and interpersonal helping skills, problem solving, group theory, community organization, community development, and social research. This core of courses is designed to give students a solid foundation in understanding, creating and applying research that will help the students become effective professionals; and to give the students the potential to add to the body of knowledge that will guide their daily decisions and behavior. The field practicum provides an opportunity to integrate theoretical knowledge and helping skills learned in the classroom with the *real world* settings of Southern Illinois social service agencies. A concurrent weekly seminar supports this integration of theory and practice. The practicum is taken in the second semester of the senior year. Block placements are not offered during the summer.

General university electives may be chosen from any university courses which are relevant to your personal interests, and/or social work major.

Social work majors must maintain a minimum overall grade point average of 2.5 (on a 4.0 scale) and a 2.5 (on a 4.0 scale) in social work courses.

Bachelor of Science Degree

University Core Curriculum Requirements	41
Requirements for Major in Social Work	60
Plant Biology 115 or Zoology 115, Sociology 108, Political Science 114, Psychology 102 and Economics 113	(9) + 6
Foundations of Social Work: Social Work 275, 400a, 400b, 411, 421	15
Social Work Practice: Social Work 383, 401, 402, 441, and 442	21

Social Work Policy, Practice, and Issues: A total of 6 hours selected from Social Work 350, 361, 363, 366 or other university electives	6
Social Work 291	3
At least two Liberal Arts electives at the 300- or 400-level selected from: anthropology, economics, history, political science, psychology, sociology	6
An introduction to statistics course	3
<i>Electives</i>	<u>19</u>
<i>Total</i>	<u>120</u>

Social Work Suggested Curricular Guide

FIRST YEAR			SECOND YEAR		
	FALL	SPRING		FALL	SPRING
SOC 108 ¹	3	-	PLB 115, ZOOL 115 ¹	3	-
Core Humanities ²	3	3	POLS 114	3	-
ENGL 101, 102	3	3	Core Multicultural	3	-
MATH 113	3	-	Core Fine Arts	3	-
Core Health	2	-	Elective	3	10
Core Science	-	3	Core Interdisciplinary	-	3
PSYC 102 ¹	-	3	ECON 113	-	3
SPCM 101	-	3			
<i>Total</i>	<u>14</u>	<u>15</u>	<i>Total</i>	<u>15</u>	<u>16</u>
THIRD YEAR			FOURTH YEAR		
	FALL	SPRING		FALL	SPRING
SOCW 275	3	-	SOCW 400b	3	-
SOCW 291	3	-	SOCW 402	3	-
SOCW 383	3	-	SOCW 411	3	-
SOCW Elective	3	-	SOCW Elective	3	-
LA Elective	3	-	Elective	3	3
SOCW 400a	-	3	SOCW 441 ⁴	-	9
SOCW 401	-	3	SOCW 442	-	3
SOCW 421	-	3			
Statistics ³	-	3			
LA Elective	-	3			
<i>Total</i>	<u>15</u>	<u>15</u>	<i>Total</i>	<u>15</u>	<u>15</u>

¹Required for Social Work major

²The school recommends that electives in the core curriculum include Philosophy 104 or 105.

³Required to enroll in Social Work 411

⁴Students must have a gpa of 2.5 (on a 4.0 scale) in Core Social Work Courses (Social Work 275, 291, 383, 400a,b, 401, 402, 411 and 421) to enroll in Advanced Field Practicum.

Social Work Faculty

Allen, Robin W., Assistant Professor, Ph.D., University of Illinois at Urbana-Champaign, 1996.

Auerbach, Arnold J., Professor, *Emeritus*, Ph.D., University of Pittsburgh, 1961.

Baker, Connie J., Instructor, M.S.W., Southern Illinois University at Carbondale, 1987.

Bratton, Letitia B., Assistant Professor, D.S.W., The Catholic University of America, 1992.

Edwards, Dennis R., Lecture, M.S.W., University of Illinois at Urbana-Champaign, 1975.

Evens, Wayne C., Assistant Professor, Ph.D., University of Iowa, 1995

Gammon, Anne E., Assistant Professor, Ph.D., University of Wisconsin-Madison, 1989.

Kawewe, Saliwe, Associate Professor, Ph.D., St. Louis University, 1985.

McFadden, Judith V., Instructor, M.S.W., University of Illinois at Urbana-Champaign, 1983.

Miah, Mizanur R., Associate Professor, Ph.D., Southern Illinois University, 1985.

Raske, Martha, Assistant Professor, Ph.D., University of Illinois-Chicago, 1986.

Reichert, Elisabeth, Assistant Professor, Ph.D., University Tennessee at Knoxville, 1989.

Tracy, Martin B., Professor and *Director*, Ph.D., University of Illinois at Urbana-Champaign, 1982.

Tracy, Patsy D., Visiting Assistant Professor, Ph.D., University of Iowa, 1995.

Other Academic Programs

Aerospace Studies (Air Force ROTC) (Department, Minor, Courses)

Aerospace Studies offers two-year and four-year programs which are open to both men and women, leading to a commission in the United States Air Force. The four-year program is divided into the General Military Course (GMC), covering the freshman and sophomore years, and the Professional Officer Course (POC), covering the last two years for which cadets are competitively selected. Students in the four-year program attend a four-week field training course in the summer between their sophomore and junior year. Students can qualify to enter the two-year program at the POC level by attending a six-week field training course during the preceding summer.

The GMC prepares students for the POC and provides them with an education for space age citizenship of long range value whether they remain civilians or become officers in the U.S. Air Force. The courses of the POC are designed to provide the basic knowledge, understanding, and experiences which are required to become an effective junior officer in the modern air force. The student learns about the wide range of USAF career specialties open and has an opportunity to request duty in those fields where qualified. Students contracted into the POC and federal scholarship recipients receive a \$150 per month subsistence allowance during the school year.

Freshman and sophomore students enrolled in the four-year program are eligible to compete for full scholarships for their remaining years at the University. In addition to full tuition and fees, the scholarship provides a monthly tax-free subsistence allowance. Also, two-year AFROTC scholarships and State of Illinois tuition waivers are available on a competitive basis.

In addition to the courses offered for academic credit, Aerospace Studies sponsors related extracurricular activities. The Aerospace Club is open to all members of the student body. The Arnold Air Society, a national honorary service organization, is open to selected AFROTC cadets. The Saluki AFROTC Drill Team is open to selected AFROTC cadets on a competitive basis. Members participate in local community events and in selected drill competition meets throughout the region.

Aerospace Studies is a voluntary course sequence leading to a commission as an officer in the United States Air Force. When commissioned, all officers must have at least a baccalaureate degree; hence completion of the program is contingent upon maintaining satisfactory progress toward graduation. Enrollment in the first two years (general military course) is unrestricted, and no military obligation is incurred. Special students who do not intend to obtain a commission are welcome.

Acceptance into the last two years (professional officer course — POC level) is competitive and requires qualification on the Air Force Officer Qualifying Test and a physical examination. For some officer candidates, the field of concentration must be related to an officer career specialty in the Air Force. Students in the professional officer courses do incur a military obligation. They are paid a monthly tax-free subsistence allowance. Graduate students who have two years remaining at the University, not counting summers, are eligible.

Qualified students may enter directly at the POC level without completing the general military courses by attending a six-week field training course during the summer prior to entrance. Four-year students attend a four-week field training course. Field training is conducted at Air Force bases and students are paid while attending.

Leadership laboratory is a supervised laboratory taken concurrently with the aerospace studies courses. In the first two years, students develop leadership potential by participating in practical leadership situations, participating in and leading drill and ceremonies, learning customs and courtesies, and preparing for field training. In the final two years of AFROTC, students develop leadership potential by assuming command and staff responsibilities, supervising the GMC cadets, and implementing the goals and objectives of the leadership laboratory.

Further information may be obtained from the Department of Aerospace Studies (Air Force ROTC), 807 South University Avenue, 618-453-2481.

Minor

A minor in aerospace studies consists of a minimum of 26 semester hours, including 301, 302, 401, and 402 plus any combination of designated courses in history, political science, management, computer science, foreign languages, geography, communications, aviation, or professional studies. This minor is structured to broaden the background of future Air Force officers by recognizing efforts in a discipline other than the student's major area of study. Students must discuss their minor program with an aerospace studies adviser to design a coherent program to meet their individual needs.

Aerospace Studies Faculty

Dondi, Paul F., Adjunct Instructor.

Dunn, Michael J., Adjunct Assistant Professor, M.A.S., University of Montana, 1995.

Eller, Jon A., Adjunct Assistant Professor, M.S., Central Missouri State University, 1985.

Magnuson, Larry D., Adjunct Professor, M.S., Pacific Lutheran University, 1979.

Stewart, Katherine A., Adjunct Instructor.

Army Military Science (Department, Minor, Courses)

Army Military Science studies is a voluntary course sequence which leads to a commission as an officer in the United States Army (Active Army, Army Reserves, or Army National Guard). The basic course, consisting of four 100 and 200 level courses is open to all students and carries no military obligation. Students may take one or all the basic courses offered, receiving credit hours for each course, without incurring a commitment to further study in Army Military Science or any branch of the armed forces. If a student continues into the advanced course, the student will then incur a military obligation. The obligation may be served in the Active Army, Army Reserves, or Army National Guard after the student is commissioned an officer, upon completion of the Army Military Science program. Students who wish to complete the program must complete a bachelor's degree, although the field of study is unrestricted. History 393 and courses in communication skills, human behavior, computer literacy, and math reasoning are also required.

Veterans of any service, students who are currently members of the armed forces (Reserve or National Guard), and students who have successfully completed three or four years of Junior Reserve Officer Training Corps instruction, may be eligible to enroll into the advanced course once they have obtained junior academic status at the University. Students who have no prior military service may attend a six week basic camp at Fort Knox, Kentucky, which will qualify them for entrance into the advanced course of Army Military Science. This six week camp incurs no obligation on the part of the student.

All students enrolled in the advanced course must attend a six week advanced camp at Fort Lewis, Washington between the first and second years of the advance course (normally the summer between the junior and senior school year). Both the

basic and advanced camp pay the student for travel and attendance at camp, plus provide free room, board, and uniforms.

Financial assistance is available in the form of Illinois State ROTC scholarships, national ROTC scholarships, and a tax free \$150 per month (for ten months) subsistence pay for all students in the advanced course.

Army ROTC classes are open to all University students with the permission of the director of Army Military Science. Non-contracted students participating in the advanced course are not eligible for Army scholarships or financial aid, and will not be commissioned as Army officers.

The senior Army Military Science program offers a progressive adventure-filled two-year and four-year program, designed to teach students the leadership and management skills needed to pursue an exciting career in the United States Army. The student who successfully completes the program will normally receive a commission either in the Regular Army, the Army Reserves, or the Army National Guard. Students may request and be guaranteed reserve forces duty, which allows the student to pursue parallel dual careers in the reserve components of the Army and civilian economy. The four-year program is divided into the basic course, covering freshman and sophomore years, and the advanced course covering the junior and senior years. Students qualify for direct entry into the advanced course level (two-year program), by completing a six-week basic leadership course during the summer at Fort Knox, Kentucky.

Veterans, National Guardsmen, Army Reserve personnel, students who have completed the basic course, and students who have completed three or more years of junior ROTC may also qualify for entry into the ROTC advanced course.

The basic course prepares students for the advanced course and provides them with an education in national defense, basic leadership, and management skills. The advanced course is designed to provide training and instruction encompassing a wide range of subjects from organizational and managerial leadership, ethics and professionalism, and military justice, to the United States military history. The understandings and experiences derived from these courses and adventure training exercises are required to enable a student to grow into an effective junior officer in the U.S. Army.

The student additionally learns about the wide range of Army career specialties available and has the opportunity to request duty in those fields where qualified. Those students currently in the Guard or Army Reserves may continue to participate in their Guard/Reserve unit and pursue a commission through the Army's Simultaneous Membership Program. Those students who qualify and are contracted for the advanced ROTC program will receive \$150 per month subsistence allowance during the school year.

Freshman and sophomore students enrolled in the four-year program are eligible to compete for Army Military Science scholarships for two or three years. These scholarships pay full tuition, fees, books and a \$150 per month subsistence allowance. Illinois residents, who are enrolled in ROTC, can compete for state Army ROTC scholarships, which pay tuition and other selected fees.

In addition to courses offered for academic credit, the Department of Army Military Science sponsors extracurricular activities. The Ranger Company, Pershing Rifles Drill and Color Guard Teams, and AUSA Company are open to all ROTC students. Adventure training takes shape in the form of rappelling clinics conducted at Giant City State Park, field training exercises, survival training conducted at Touch of Nature Environmental Center, Shawnee National Forest, and Civil War Battlefield terrain walks. The department also sponsors numerous formal social functions throughout the year.

Further information may be obtained from the Department of Army Military Science, telephone 618-453-5786.

Minor

A minor in Military Science consists of at least 25 semester hours, including course work in AMS courses 301, 302, 358, 401 and 402 plus designated courses in written communication, military history, human behavior, computer literacy and mathematics reasoning. Courses in national security affairs and management are also highly encouraged. With its emphasis on leadership and small unit tactics, this minor is structured to develop the attributes required of successful officers in today's United States Army. This minor also recognizes sustained course work in a discipline other than the student's major area of study. Students must discuss their minor program with the director, Army Military Science, to design a coherent program to meet their individual needs.

Army Military Science Faculty

Cagle, Jon R., SFC, Adjunct Instructor.

Castin, Patrick J., SFC, Adjunct Instructor.

Malone, Mitchell G., CPT, Adjunct Assistant Professor, B.S., Illinois State University, 1983.

Meneghetti, Michael P., CPT, Adjunct Assistant Professor, B.S., Governors State University, 1985.

Pietrowski, Douglas P., CPT, Adjunct Assistant Professor, B.S., College of Saint Benedict, Minnesota.

Simpson, Glen E., SFC, Adjunct Instructor.

Smith, Sharon J., SSG, Adjunct Assistant Instructor.

Stroud, Timothy B., LTC, Adjunct Professor and *Director*, M.P.A., University of Missouri at Kansas City, 1992.

Environmental Studies (Minor)

The Environmental Studies minor at Southern Illinois University allows students to concentrate core and elective courses from a variety of colleges in a focused, integrated, interdisciplinary study of the environment. The goals of the minor are: (1) to provide students with a basic understanding of the complex environmental issues and opportunities faced by society; (2) to develop and refine student's environmental values from an overview of these issues; and (3) prepare students to translate these values into practical actions in a broad spectrum of environmental or related career fields, or simply as better informed individuals. The Environmental Studies minor involves the cooperation and contribution of faculty members from a broad range of disciplines and departments.

Students may enroll in the Environmental Studies minor after entering a major program in any participating academic department at SIUC with the approval of their academic adviser and the Environmental Studies coordinator. A minor consists of three core courses and a minimum of six hours chosen from among five general groups. For further information contact the Environmental Studies coordinator at 453-4143, 453-4115 or visit the office in Life Science II, Room 354A.

Graduate School

John H. Yopp, *Dean*

Southern Illinois University at Carbondale is a comprehensive university with an extensive offering of graduate programs and an equally strong commitment to research.

More than 4,000 graduate students pursue advanced study and research under the leadership and direction of some 900 graduate faculty members. The Graduate School offers master's degrees through fifty-nine programs, and the doctoral degree

through twenty-eight programs. The doctoral program in education has concentrations in six areas.

The highest degrees awarded are the Doctor of Philosophy, the Doctor of Business Administration, and the Doctor of Rehabilitation.

In addition to the Master of Arts and the Master of Science degrees, the master's degrees awarded are Master of Accountancy, Master of Business Administration, Master of Fine Arts, Master of Music, Master of Public Administration, Master of Science in Education, and Master of Social Work.

The Graduate School is fully accredited by the North Central Association of Colleges and Secondary Schools, and specific programs have been accredited by appropriate state and national accrediting associations.

A separate catalog describing admission, courses and graduation requirements for the various programs in the Graduate School may be obtained by writing to the Graduate School, Southern Illinois University at Carbondale, Carbondale, Illinois 62901-4716.

Library Affairs

Carolyn A. Snyder, *Dean*

Morris Library, named after the late Delyte W. Morris, University president from 1948 to 1970, features LINKS, a remotely accessible information network providing entry to library catalogs, abstract and index services, full-text databases, and local and national technological resources. The Library contains over two million volumes, some 13,000 current periodicals and serials, and two and a half million microforms. Collections of government documents, maps, films, and sound recordings are prominent as well. With the exception of materials in Special Collections, most items are arranged on open shelves and are available for browsing.

The online bibliographic search services provide access to over 800 Illinois libraries through Illinet Online (IO) plus numerous academic libraries nationwide. CD-ROM (compact disk) stations located throughout the Library provide access to recent information in thousands of periodical titles as well as abstracts and indexes for many specialized areas of study. Many of these resources as well as the Internet can be accessed from personal computers located on each floor of the library, and, also in dormitories, offices, and homes by direct connection with the University computer network or via modem. Illinet Online also provides an online circulation system to participating libraries and supports computerized interlibrary loan activity, promoting and enhancing resource sharing on a statewide basis.

Morris Library houses four subject divisions in Humanities, Social Studies, Education and Psychology, and Science; Special Collections; a combined Reserved Reading and Self-Instruction Center; and an Undergraduate Library. The Library also provides instructional design and instructional technologies in its Instructional Support Services unit. In the basement is a state of the art classroom for Distant Learning and a center for multi-media training and development.

The Undergraduate Library, located on the first floor, maintains a core collection of electronic data bases and print volumes that are considered basic to the undergraduate curriculum. The combined reserved-reading and self-instruction services are located within the Undergraduate Library, as well. Course-related materials in various media are made available to all class participants for limited-time usage. The central circulation desk, a part of Access Services, where all books are checked out, also is on the first floor. Books recalled from the Library's off-site storage facility are picked up at the circulation desk. The Browsing Room, containing recent books of a popular nature to provide recreational and avocational reading, also is found on the first floor.

Special Collections, on the second floor of Morris Library, maintains the rare books and manuscript collections, and the University archives. It contains important research collections in American Philosophy, First Amendment Freedoms, American and British expatriate literature, the Irish literary renaissance, proletariat theater, and the history of southern Illinois. Special Collections has numerous interesting exhibits of materials from its collections.

The Humanities division, which includes sound recordings and a listening area, also is on the second floor. The Social Studies division is on the third floor, and it includes Government Documents. The Social Studies division also maintains special computer equipment capable of combining statistical, governmental and geographical data. This currently is housed on the second floor.

The Education and Psychology division is on the fourth floor. It also includes a center for curriculum materials. The Science division on the fifth and sixth floors also houses an extensive map collection.

The Ulysses S. Grant Association, which is another unit of Library Affairs, collects, edits and publishes the entire correspondence of President Ulysses S. Grant. It has its editorial office on the third floor of Morris Library.

The Library faculty and staff recognize the complexity involved in using a research library and are eager to help students, faculty, staff and others in satisfying their research needs. Seminars and tutorials and printed handouts for computer indices, the Internet, bibliographic instruction, library use and information retrieval are provided on a continuing basis by Library faculty and staff. Reference librarians in the Undergraduate Library and each of the subject divisions are available to help researchers with their search strategies and to acquaint them with the ever-expanding range of electronic finding aids.

Library Affairs Faculty

Bauner, Ruth E., Associate Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1978.

Black, George W., Jr., Professor, *Emeritus*, M.S.L.S., Columbia University, 1966.

Brown, F. Dale, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1978.

Butler, Kathleen J., Assistant Professor M.S.L.S., University of Pittsburgh, 1992.

Callahan, Daren, Associate Professor, M.S.L.S., University of North Carolina at Chapel Hill, 1989.

Chervinko, James S., Assistant Professor, M.S.L.S., University of Illinois, 1973.

Cox, Shelley M., Associate Professor, M.A., Southern Illinois University at Carbondale, 1981.

Crane, Lilly E., Assistant Professor, *Emerita*, M.A.L.S., University of Michigan, 1967.

Davis, Harry, Assistant Professor, M.A.L.S., University of Denver, 1969.

Davis, Marta A., Assistant Professor, M.A.L.S., University of Denver, 1969.

Drickamer, Karen D., Assistant Professor, M.L.S., State University of New York at Albany, 1987.

Elmore, Rheena, Assistant Professor, M.S.L.S., University of Alabama, 1993.

Fahey, Kathleen G., Assistant Professor, M.S., University of Michigan, 1971.

Foote, Jody B., Assistant Professor, M.L.S., University of Texas, 1979.

Fox, James W., Assistant Professor, M.S.L.S., University of North Carolina, 1975.

Fox, Mary Anne, Associate Professor, M.A., Southern Illinois University at Carbondale, 1979.

Harrison, Mary, Assistant Professor, M.L.S., University of Alabama, 1974.

Harwood, Judith Ann, Associate Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1981.

Hostetler, Jerry, Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1977.

Hunter, Tracey Joel, Assistant Professor, M.S.L.S., University of Pittsburgh, 1989.

Hutton, Betty Jean, Assistant Professor, *Emerita*, M.S., Southern Illinois University at Carbondale, 1968.

Isbell, Mary K., Assistant Professor, *Emerita*, M.S., Southern Illinois University at Carbondale, 1971.

Jenkins, Darrell L., Associate Professor, M.A., New Mexico State University, 1976.

Keel, Robert L., Assistant Professor, *Emeritus*, M.A.L.S., George Peabody College for Teachers, 1961.

Kilpatrick, Thomas L., Professor, M.S.L.S., University of Illinois, 1963, Ph.D., George Peabody College for Teachers of Vanderbilt University, 1982.

Koch, David V., Associate Professor, M.A., Southern Illinois University at Carbondale, 1963.

Koch, Loretta, Associate Professor, M.S.L.S., University of Illinois, 1974.

Lampman, Wilma L., Assistant Professor, *Emerita*, M.S., Southern Illinois University at Carbondale, 1978.

Logue, Susan, Assistant Professor, M.S.L.S., University of Illinois, 1994.

MacLeod, Judith M., Associate Professor, M.S.L.S., University of Illinois, 1990.

Marrero, Carlos E., Assistant Professor, *Emeritus*, M.A.L.S., University of Denver, 1961.

Matson, Susan A., Assistant Professor, Ph.D., University of Wisconsin, 1972, M.A.L.S., University of Wisconsin-Madison, 1977.

McCoy, Ralph E., Professor, *Emeritus*, Ph.D., University of Illinois, 1956.

Matthews, Elizabeth W., Professor, *Emerita*, Ph.D., Southern Illinois University at Carbondale, 1972.

Person, Roland C., Professor, M.L.S., University of Wisconsin-Madison, 1970, Ph.D., Southern Illinois University at Carbondale 1982.

Peterson, Kenneth G., Professor, *Emeritus*, Ph.D., University of California at Berkeley, 1968.

Pixley, Lorene, Assistant Professor, *Emerita*, M.S.L.S., University of Illinois, 1960.

Preece, Barbara G., Associate Professor, M.A.L.S., University of Minnesota, 1979.

Rubin, Angela, Assistant Professor, *Emerita*, M.S.L.S., University of Illinois, 1956.

Russell, Thyra K., Assistant Professor, M.A.L.S., Northern Illinois University, 1972, Ph.D., Southern Illinois University at Carbondale 1987.

Scott, W. Willie, Assistant Professor, *Emeritus*, M.M., Southern Illinois University at Carbondale, 1981.

Simon, John Y., Professor, Ph.D., Harvard University, 1961.

Snyder, Carolyn A., Professor and Dean, M.A.L.S., University of Denver, 1965.

Stubbs, Walter R., Associate Professor, M.A.L.S., Northern Illinois University, 1968, Ph.D., Southern Illinois University at Carbondale, 1983.

Tax, Andrew T., Assistant Professor, *Emeritus*, M.L.S., Charles University, Prague, 1962.

Taylor, Mary, Assistant Professor, M.A.L.S., University of Wisconsin-Madison, 1993.

Watson, John Mark, Assistant Professor, M.L.S., Indiana University, 1989.

Wen, Shixing, Assistant Professor, M.L.S., Indiana University, 1993.

Wilson, Betty Ruth, Associate Professor, *Emerita*, M.A., George Peabody College for Teachers, 1957.

Wood, Don E., Assistant Professor, M.S.L.S., University of Illinois, 1965.

Nursing (Preprofessional Program)

The School of Nursing of Southern Illinois University at Edwardsville offers a program of study leading to a Bachelor of Science degree in nursing. The program is accredited by the National League of Nursing. The curriculum is designed to prepare qualified individuals to function competently as beginning professional nurse practitioners; to participate in providing a broad scope of health care in a variety of settings and to obtain a foundation for continued professional growth and graduate education. Professional nursing practice is broad in scope and serves individuals in a multiplicity of settings; thus the professional nurse functions in both traditional and non-traditional situations which may require innovative as well as conventional patterns of practice.

The following curriculum is based on the requirements of SIUE's School of Nursing. The Pre-Nursing program can be accelerated to a three-semester sequence of prerequisite courses by students who have a strong academic preparation in appropriate subject areas. Students interested in other nursing schools are encouraged to meet with the nursing advisor as soon as they come to campus.

Nursing Specialization Suggested Curriculum Guide

FIRST YEAR	FALL	SPRING	SECOND YEAR	FALL	SPRING
ENGL 101, 102*	3	3	PHIL 201, 208*	4	-
CHEM 140a,b*	4	4	MICR 301*	4	-
Select ¹ *	3	3	PHSL 301*	-	4
SPCM 101*	3	-	Select ³	3	-
Select ²	3	-	Select ⁴	-	3
PHIL 104	-	3	Select ⁵	3	-
HED 311*	-	3	PHIL 105	-	3
			Select	-	3-6
<i>Total</i>	16	16	<i>Total</i>	14	13-16

¹Choose two introductory Social Science courses from: Anthropology 104, Economics 241, Geography 103, History 101a, Psychology 102, Sociology 108.

²Choose one introductory Humanities course from: Art and Design 101, English 205, Music 103, Philosophy 102, Theater 101.

³Choose one advanced Social Science course from: Anthropology 202, Black American Studies 215, History 202, Sociology 215, Women's Studies 201.

⁴Choose one advanced Social Science course from: History 101b, 110, 300, 301, Political Science 114, Sociology 304i, or a 300-level Psychology course.

⁵Choose one advanced Humanities course from: Cinema and Photography 101, English 121, 203, Foreign Language and Literature 230, Philosophy 211.

Courses identified as Prerequisite (*) must each be completed with a grade of C or above. All prerequisite courses must be completed with an average of 2.7 in these courses to be considered for admission to SIUE School of Nursing. (Admission to SIUE does not guarantee acceptance to the School of Nursing.) Other courses listed here represent degree requirements for the SIUE Bachelor of Science in Nursing. Students should contact Mr. Oakey, the nursing advisor, in the Pre-Major Advisement Center in Woody Hall C-117 for further curricular information and for information concerning application to SIUE School of Nursing. SIUE School of Nursing admits qualified applicants to both Fall and Spring semesters. At least five semesters at SIUE are required for completing the bachelor's degree in Nursing.

School of Law

Thomas Guernsey, *Dean*

The Southern Illinois University School of Law, established in 1973, is a small law school with roughly 350 students—approximately 125 students enter the school each fall. The student/faculty ratio of 15:1 ranks among the best in the United States. The school is housed in a spacious, modern building that contains classrooms, a law library, a legal clinic, faculty offices, an auditorium and student lounges. The school is fully accredited by the American Bar Association and is a member of the Association of American Law Schools.

The School of Law offers an extensive curriculum, emphasizing skills in courses such as legal writing and research, transactional drafting, legal argumentation and trial advocacy. The school has an active moot court program and a unique legal clinic in which upper-class students gain practical experience in civil cases under the supervision of the clinic faculty. The school is a leader in the fields of environmental law, health law and international law. The school's moot court teams have won the national championships in several different areas. In competition among Illinois schools (the all-Illinois competition), Southern Illinois University at Carbondale has earned the reputation as the "team to beat".

In cooperation with the Graduate School, the School of Law offers concurrent juris doctor and master's degrees in business administration, public affairs and accountancy. It is one of a handful of schools to offer a joint J.D./M.D. degree, which it does in conjunction with the SIU School of Medicine. The law library contains over 300,000 volumes — more than are in over 50 percent of academic law libraries in the country.

— as well as two computer-assisted research systems (LEXIS and Westlaw). It also features a computer lab. All law students have keys to building, which gives them 24-hour access to the law library.

Information on admission to SIUC School of Law can be obtained by writing to:

Assistant Dean for Admissions and Student Affairs

School of Law

Southern Illinois University at Carbondale

Carbondale, Illinois 62901-6804

Note: Information on undergraduate preparation necessary for schools of law is given under Pre-Law below.

School of Medicine

Carl J. Getto, *Dean*

Southern Illinois University School of Medicine was established in 1970 after the Illinois General Assembly passed a bill calling for a second state medical school to be established in downstate Illinois. The school graduated an advanced standing class in 1975 and its charter class of all Illinois students in 1976. Currently, 72 students are admitted each year. Today, the school encompasses a complete sequence of medical education beginning with the M.D. degree and progressing through residency training and on to continuing medical education for practicing physicians.

The school's competency-based curriculum has brought the school national attention. Since students are not evaluated in competition with their peers, they are stimulated to cooperate with one another, a situation which more closely resembles what takes place in the actual practice of medicine. Problem-based learning concepts, including active learning situations with paper and simulated patients, are used to help students work toward competency throughout the curriculum. The four-year M.D. degree begins the first year in Carbondale where students concentrate on the basic sciences. The remaining three years are spent in Springfield where students study clinical medicine along with medical humanities and various electives.

The instructional program in Carbondale is based in Lindegren Hall and Memorial Hospital. In Springfield, it is based in the Medical Instructional Facility, the SIU Clinics, Memorial Medical Center and St. John's Hospital.

The school has one of the highest percentages of minority students enrolled of any Illinois medical school. Its Medical Education Preparatory Program (MEDPREP) in Carbondale is designed to assist minority and other students with educationally disadvantaged backgrounds to prepare for success in medical and dental schools.

The University residency programs include dermatology, family practice, internal medicine, medicine/pediatrics, medicine/psychiatry, neurology, obstetrics and gynecology, pediatrics, psychiatry, radiology and six surgical specialties. There are twelve fellowships for advanced clinical work.

The school's continuing medical education program provides an extensive accredited schedule of conferences and symposia for physicians and other health care professionals in central and southern Illinois. Springfield is the location for about three-fourths of the programs; the rest are held throughout the lower half of the state, including the school's Family Practice Centers.

The faculty in Carbondale's four basic science departments as well as Springfield's two medical sciences departments divide their time between teaching responsibilities and independent and collaborative research projects and regional support services. Both clinical investigators and the basic scientists collaborate on a wide-range of medical and scientific projects; they work in the various basic science laboratories on both campuses and in the clinical facilities located in the affiliated hospitals in Springfield. The faculty's commitment to research is further characterized by the of-

fering of graduate programs leading to master's and doctoral degrees in physiology, in pharmacology and in medical microbiology and immunology.

Interfaced with all of its various educational and research programs is the provision of patient care through the various clinical departments and specialized clinics of the school and the practice of its physician faculty.

Preference is given to applicants from central and southern Illinois intending to practice medicine in the state. Inquiries regarding admissions and requests for a School of Medicine catalog should be addressed to the director of admissions, Southern Illinois University School of Medicine, P.O. Box 19230, Mail Code 1226, Springfield, Illinois 62794-1226.

MEDPREP (Medical/Dental Education Preparatory Program)

MEDPREP is a postbaccalaureate program within the Southern Illinois University School of Medicine. MEDPREP is a certificate granting program. Courses are restricted to MEDPREP students only. Admission to MEDPREP is by direct application to the program. See the MEDPREP admissions coordinator for further information.

Medical Education Preparation Faculty

Bardo, Harold R., Assistant Dean for Minority Affairs and Counseling, Educational Psychology, Ph.D., Southern Illinois University, 1972.

Chaklos, Mary S., Visiting Instructor, Chemistry and Biochemistry, Ph.D., Southern Illinois University, 1979.

Henry, Paul, Associate Professor, Counselor Education/Education Psychology, Southern Illinois University, 1982.

Herrold, Linda K., Visiting Instructor, Mathematics, M.S., Southern Illinois University, 1990.

Jackson, Evelyn W., Associate Professor, Education/Reading, Ph.D., Southern Illinois University, 1975.

Jones, Kathleen A., Visiting Instructor, Biological Sciences, M.S., Southern Illinois University, 1990.

Kaplan, Harold M., Visiting Professor, Physiology, Ph.D., Harvard University, 1933.

McGlinn, Shirley, Instructor, Zoology, M.S., Southern Illinois University, 1975.

Szary, Barbara, Instructor, Immunology, Ph.D., Institute of Immunology and Experimental Therapy, 1977.

University Honors Program (Program, Courses)

The University Honors Program is a university-wide undergraduate program designed to reward SIUC's best students for their high academic achievement. The heart of the program is the Honors curriculum: small classes, called seminars, unique in character and specially designed for University Honors students by outstanding SIUC faculty. Each Honors seminar is limited in size to 15 students, and restricted in enrollment to honors students only. The University allows Honors students to substitute Honors seminars for any or all of their 29 semester hours of Core Curriculum requirements in Disciplinary and Integrative Studies (see University Core Curriculum - approved substitutes, Chapter 3).

Membership in the University Honors Program brings additional advantages including extended check-out privileges at Morris Library, early academic advisement and registration, publication in *Papyrus* (the journal of the Honors Program), and others.

Continuing SIUC students and transfer students with at least 12 semester hours of college credit qualify for admission to the University Honors Program on the basis of a cumulative grade-point average of 3.25 or higher. Entering freshmen qualify for admission to the program on the basis of an ACT composite score in the 95th percentile or higher.

The University Honors Program is designed to offer unique educational experiences to participating students. The program includes seminars, special sections of

certain classes and independent study. Some scholarships and internships are available to University Honors Students.

Members of the Program are designated as University Honors Students. Retention in the University Honors Program depends upon maintaining a 3.25 cumulative grade point average in all course work and no failing grades in honors courses.

Baccalaureate degrees for University Honors Students are awarded through the regular degree-granting units. Those who successfully complete the University Honors Program graduation option receive recognition on the academic record and on the diploma at the time the degree is recorded.

The Honors graduation option for continuing SIUC students, transfer students without Associate degrees, and entering freshmen is a minimum of 15 semester hours of Honors course work, including a senior Honors thesis or project, approved in advance by the director. The Honors graduation option for transfer students who enter SIUC with an Associate of Arts or an Associate of Science degree (including Capstone students) and two-year degree candidates at SIUC is a minimum of 9 semester hours of Honors course work, including a senior Honors thesis or project, approved in advance by the director. Substitution for this option may be arranged for a student in a major which does not allow curricular flexibility.

University Honors Students may substitute a University Honors seminar for any or all of their University Core Curriculum requirements in Disciplinary Studies (Fine Arts, Human Health, Humanities, Science and Social Science) and Integrative Studies (Multicultural Diversity in the U.S., and Interdisciplinary). No Honors substitutions are allowed for Foundation Skills requirements in composition, mathematics or speech.

University Honors Students may be exempted from all University Core Curriculum requirements if they (1) pass all five CLEP General Examinations before entering the University with these minimum scores: natural sciences, social sciences, and humanities, 520; English composition with essay, 565; and mathematics, 580; and (2) complete the University Honors Program graduation option. No retroactive extension of the CLEP privilege will be allowed.

Fuller information and application forms are available at the University Honors Program office, Faner Hall 3341.

Women's Studies (Minor)

A women's studies minor is interdisciplinary and designed to enrich and extend a student's major field of sharing insights gained from the study of women including issues of gender, race and class. Course work can be selected to reflect individual student interests and enhance the major by contributing knowledge, understanding, and sensitivities helpful to students in both the university and work settings.

Women's studies is an appropriate minor for many undergraduate majors as well as for students planning graduate or professional studies. For example, people's orientation toward their work may be affected by an historical understanding of the significant roles women have played in various disciplines, and the ways women have been treated by the courts, the health care professions, the educational system, employment, religion, literature, or the arts.

Because it is interdisciplinary, inclusive of race and class scholarship, the women's studies minor should reflect academic work in the arts and humanities, the natural and social sciences and race and cross-cultural issues.

Minor

Minors must be approved by the coordinator of women's studies in order to assist students in developing a coherent program that meets their individual interests. The

minor requires 18 semester hours of credit, 15 of which must be in women's studies courses, while the remaining 3 hours may be selected from a special interest or related course for example, in Black American Studies. Schedules of classes contain listings of relevant courses. The minor must include 201 and 492. Students are urged to discuss and plan their minors with the coordinator of women's studies or with a faculty member who teaches women's studies courses.

Other Academic Activities

Pre-Major Advisement Center

The Pre-Major Advisement Center is the academic home of students who have not declared a major. The advisers have knowledge of the many programs offered by the University and will help students explore and select majors in relation to their interests and abilities. Advisers are available for academic advisement by appointment throughout each semester. There is also an adviser available at specified times each day for problem solving on a walk-in basis. The Pre-Major Advisement Center is located in Woody Hall, C-117. Call 618-453-4351 for more information.

Center for Basic Skills

The Center for Basic Skills offers special academic assistance for a select group of entering freshmen through laboratory instruction, small group sessions, workshops, seminars, and tutorials in study/learning skills, speech communication, selected University Core Curriculum courses, and personal and career counseling and guidance. For additional information, contact the director of the Center for Basic Skills.

Individualized Two Plus Two Program

The Individualized Two Plus Two program allows baccalaureate oriented freshman students at community colleges to benefit from "pre-advisement" for a chosen major at Southern Illinois University at Carbondale. The Individualized Two Plus Two program addresses specific departmental requirements that a student may not fulfill simply by completing their A.A. or A.S. at their community college. Students who apply for the Individualized Two Plus Two program are provided with a plan that will guide them to the most direct route to their Bachelor's degree. The plan includes major gpa requirements and a listing of all required major and University Core Curriculum coursework. Participation in the Individualized Two Plus Two program also allows students to receive notification of deadlines for financial aid and housing. Students are encouraged to visit the campus and meet with their prospective collegiate unit advisers.

Upward Bound

This is a pre-college support program funded by the federal government which identifies and recruits ninth to twelfth grade students in specific areas of southern Illinois who have the potential for serious academic work. The program provides developmental, personal, and academic opportunities for underprivileged students who might not otherwise see themselves as future college students. Persons interested should direct inquiries to the director, Upward Bound.

Southern Illinois Regional Career Preparation Program

The Southern Illinois Regional Career Preparation Program is sponsored by Southern Illinois University at Carbondale. The program is designed to increase motivation, to provide academic enrichment, to encourage career exploration and continued enrollment in school for promising southern Illinois minority students who are 7th, 8th,

or 9th graders. Instruction in critical thinking, computer science, mathematics and career development is provided in the academic year and summer programs. Parents are given information about financial aid and specific guidance in assisting their children in academic and career pursuits. For additional information contact the project director.

Future Scholars Program

The Future Scholars Program at Southern Illinois University at Carbondale is a program designed especially for high school minority students who have a true desire not only to attend college but also to excel in college.

Forty carefully selected students, twenty in an advanced group and twenty in an intermediate group, will have the opportunity to experience the University environment first-hand. The Future Scholars Program occurs during four weeks in July, and the selected students live in campus residence halls, eat with their peers in residence cafeterias and study college courses.

Division of Continuing Education

The Division of Continuing Education extends the University's educational mission beyond regular course offerings and campus boundaries. The division's off-campus credit programs, the Evening/Weekend Program, credit free classes, workshops and conferences, the Individualized Learning program, and the contractual services program offer the University's resources to a variety of groups and individuals both on and off campus.

Off-Campus Credit. Off-Campus credit programs are designed to meet the educational needs of adults wishing to pursue a degree but who are unable to travel to the Carbondale campus. Faculty teaching off-campus courses are approved by the appropriate department. Graduate courses in agriculture, education, and rehabilitation administration, as well as a variety of upper division undergraduate courses are offered at various locations throughout Illinois. An undergraduate degree program in University Studies is available to students at selected, off-campus sites.

Evening and Weekend Program. The Evening and Weekend Program provides individuals within commuting distance of the campus the opportunity to take up to 26 undergraduate hours of college work on a special admission basis. Tuition is the same as for all other undergraduate courses, but students in the program pay reduced fees.

Individuals who possess a high school diploma or GED certificate and who have not been academically suspended from Southern Illinois University at Carbondale or any other institution of higher education during the twelve months prior to application for the Evening and Weekend Program are eligible for admission. Students may take course loads not to exceed eight semester hours during fall and spring semesters and up to five hours during summer session. Registration may be completed by telephone and mail.

Individualized Learning. Individuals who cannot attend classes at scheduled times may wish to enroll in an individualized learning course. Such courses are designed to be completed by the students at their own pace and time and, in many instances, in their own home. All courses in the Individualized Learning program are developed by University faculty and approved for academic credit.

Contractual Services. The contractual services office provides specialized educational services to groups, organizations, governmental agencies, and businesses on a cost-

recovery basis. These services are provided regionally, nationally, and internationally.

Credit-Free Activities. Conferences, workshops, seminars, short courses, institutes and teleconference are offered both on and off campus. The division assists with the development, implementation, evaluation and financial accounting for these programs. Major emphasis is on extending the educational, cultural and physical resources of the University to the local, state, national and international community.

The Professional Development Series is offered through short term formats. This series features instruction by University faculty and carefully selected specialists from business and industry. Continuing Education Units (CEU) are available for many of these offerings and many meet mandated professional education requirements. Participants in this program often include professionals from outside the University community.

An award winning Community Listener's Permit Program opens classrooms of SIUC to the people of Southern Illinois. It is a special program that provides people of all ages and walks of life the opportunity to access the college classrooms without enrolling for credit. For a modest fee and the permission of the instructors, participants can sample subjects that interest them the most from "art history" to "zoology".

Military Programs

The Office of Military Programs is the central administrative unit for the University's various programs for military personnel. Currently, baccalaureate programs are offered through the College of Education, the College of Applied Sciences and Arts, and the College of Engineering. The office serves as the principal point of contact and represents the University with external agencies in matters pertaining to educational programs at military bases. For additional information refer to the section on the Financial Aid Office in Chapter 1, to the Capstone Option in Chapter 3, and credit granted for military experiences in Chapter 2. Students interested in admission should consult the Southern Illinois University at Carbondale base representative on the appropriate military base.

Southern Illinois University at Carbondale in Niigata, Japan

In May, 1988, Southern Illinois University at Carbondale initiated an Off-Campus Academic Program in Nakajo, Niigata, Japan, underwritten and in cooperation with the Municipality of Nakajo. The program offers an intensive English program and two years of pre-major University Core Curriculum courses to Japanese students. The courses are taught by SIUC faculty or by faculty approved by SIUC's respective academic departments. It is expected that students will matriculate to SIUC or other U.S. universities at the junior level. Transcripts and credits for the students are generated by SIUC.

A semester or academic year of study abroad in Nakajo, Japan emphasizing Japanese language, culture, and intercultural competence is offered to SIUC and other U.S. students in conjunction with this program. See the following "Opportunities for Study Abroad" for details.

Opportunities for Study Abroad

International Programs and Services serves as an information, advising and referral center for study, work and travel abroad in addition to administering university study abroad programs and exchanges. Additional information for all programs may be obtained from the Study Abroad Programs division, International Programs and Services, 803 South Oakland Street.

GROUP PROGRAMS

International Studies in Austria. One or two semesters of study in German, Austrian life and culture, political science, business, fine arts and communications at the SIUC program in Bregenz, Austria. All courses, except German, are taught in English and will vary from term to term. Bregenz is located on Lake Constance near the border with Germany and Switzerland. No prior German is required although it is recommended.

International Studies in Japan. One or two semesters of study in Japanese language, culture and society are offered at the University's off-campus program in Nakajo, Japan. This program features the opportunity to live with Japanese students and to interact with members of the local community. In addition to Japanese studies courses, students will have the opportunity to take University Core Curriculum courses offered in Japan.

Year Abroad in Austria. Two semesters are offered in Vienna at the Wirtschaftsuniversität (University of Economics) and other institutions. All courses are taught in German and require the student to have completed five semesters of college-level German or equivalent with a 3.0 grade point average. Students may earn 30 to 34 semester hours of undergraduate credit in German language, literature, and civilization and in certain other areas with prior approval. Additional information may be obtained from the Department of Foreign Languages and Literatures.

International Student Exchange Program. This exchange program is multilateral and involves one-year placements at 100 study sites worldwide. It is a one-for-one exchange plan under which students pay their normal tuition and fees, including room and board, and apply credit earned toward their degrees. There are study sites in Africa, Asia, Australia, the British Isles, Canada, Europe, and Latin America. Applicants must be mature, have a minimum grade point average of 3.25, and possess the appropriate foreign language skills. Acceptance into the program is considered an honor bestowed in lieu of a scholarship. Most forms of financial aid can be used for this program.

Travel/Study Program. Travel/Study courses are offered during intersessions as well as during the summer months. Students must register four to six months prior to the start of the course and may earn graduate or undergraduate credit depending upon the nature of the course. Approximately ten offerings are available during each academic year, ranging in length from one week to two months. Courses are taught by full-time faculty of Southern Illinois University and most do not require a specialized foreign language background.

Utrecht Network. The University participates in an exchange program with a consortium of European Community universities coordinated by Utrecht University in the Netherlands. There are currently possible exchange sites in Austria, Belgium, Denmark, France, Germany, Great Britain, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain and Sweden.

Council on International Educational Exchange. The University is an institutional member of this organization which sponsors study abroad programs around the world, the International Student ID Card and various work abroad programs. Students may participate in the Council's study abroad programs while maintaining their enrollment through the University.

EXCHANGE PROGRAMS

Australia: Curtin University of Technology, Perth (International Programs and Services).

France: University of Caen (Foreign Languages and Literatures).

Germany: University of Hamburg, Hamburg (Foreign Languages and Literatures); University of Mainz, (English/Foreign Languages and Literatures), University of Regensburg, Regensburg (English).

Great Britain: Victoria University of Manchester (International Programs and Services); West Surrey College of Art and Design, Surrey (School of Art and Design).

Japan: Kansai University of Foreign Studies, Hirakata; Meiji University, Tokyo (International Programs and Services).

Switzerland: Dolmetscherschule, Zurich Interpreters School, Zurich (Foreign Languages and Literatures).

Information concerning eligibility, requirements, program offerings, and application deadlines may be obtained from the International Programs and Services or the department listed.

INDIVIDUAL OPPORTUNITIES

Credit might be earned through (a) a department's independent study courses such as readings, individual research, practicum or related types of courses with prior departmental approval; or (b) a department or college's travel/study course where offered.

OTHER PROGRAMS

Southern Illinois University at Carbondale may also grant credit for programs not sponsored by the University. A student may enroll in a study/travel program conducted by a regionally accredited United States institution and transfer the credit to this university. Credits earned in this manner will be evaluated as electives unless a department, program, or the Office of Admissions and Records approved the courses in advance to apply toward specific requirements. Additional information may be obtained from International Programs and Services.

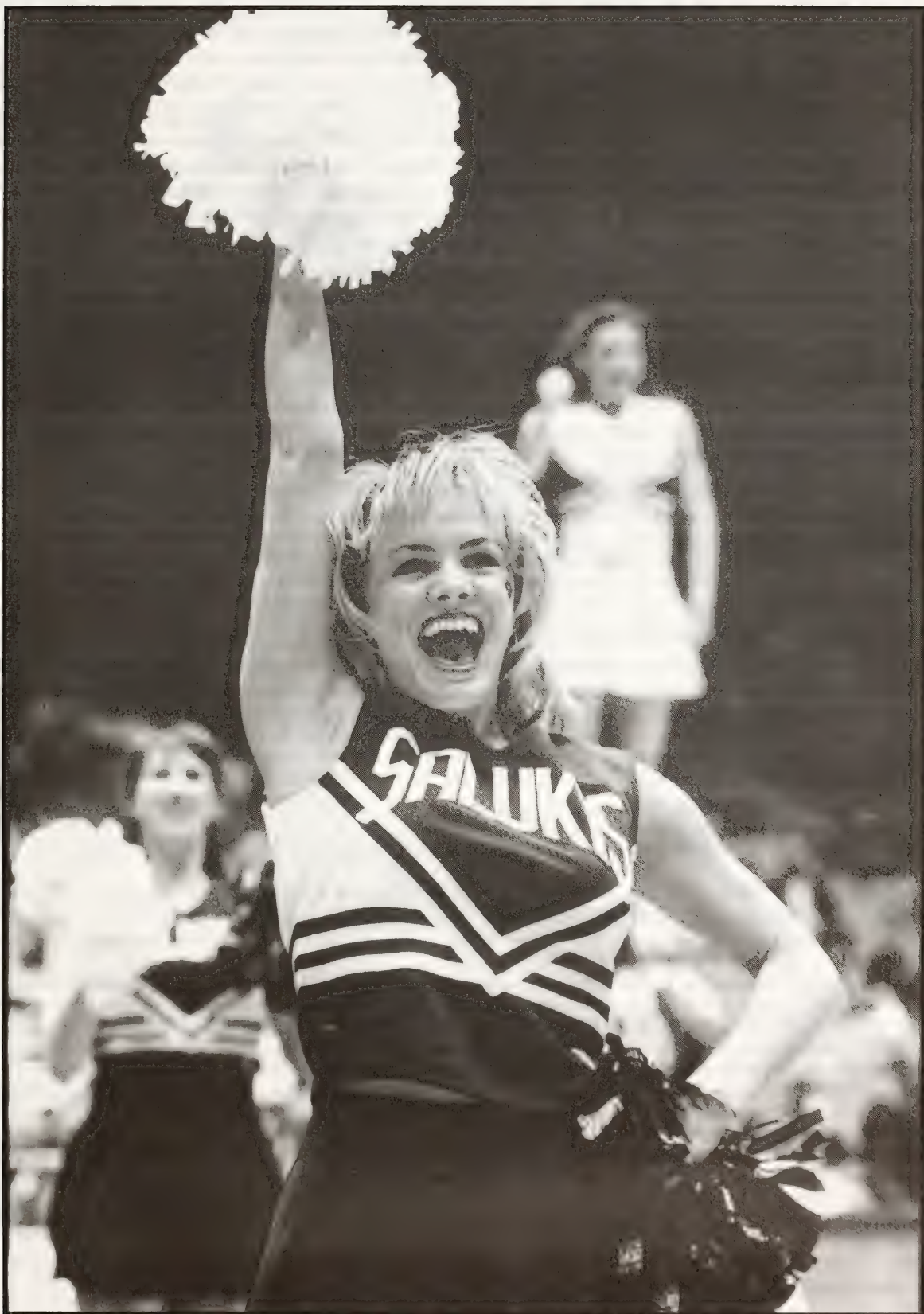
A student may enroll in either a foreign institution or an independent location of a foreign institution. It is important that the student check with the Office of Admissions and Records before registering since many foreign institutions are not accredited. Graduate students should check with the Graduate School. Credits earned in this manner will count as electives only unless a department or program approves them to apply toward specific requirements.

Internships in Washington

Eligible students from Southern Illinois University at Carbondale can combine a work and learning experience for credit through the Washington Center. Participants can intern in congressional offices, executive agencies, and with groups in many other areas such as the environment, consumer affairs, journalism, communications, legal affairs, labor relations, health policy, arts, education, science, public relations, urban affairs, and women's issues. Interns also attend seminars taught by representatives of major governmental agencies, interest groups, and corporations.

The Washington Center internships at the University are coordinated through the office of the University Honors Program.

5 / University Courses



University Courses

How to Read Course Numbers

The first entry for each course is a three digit numeral plus, in some cases, a single letter which together with the subject area, serves to identify the course. The first digit indicates that the course is for freshmen, sophomores, juniors, or seniors, depending on whether the digit is 1, 2, 3, or 4. If the digit is 0, the course is not properly in the above categories with the exception of Music courses. A letter following the three numerals may indicate a *part* of a course (where *a* means first part, *b* means second part, etc.) or may identify the topics or subject areas specified in courses such as readings or special problems. A numeral or numerals separated from the identification number by a dash indicates the number of hours of credit received in the course. For example, Physics 203-6 (3,3) indicates a sophomore-level, two-part course of 6 hours in the Department of Physics. The two parts of the course may be referred to as Physics 203a,b. The credit may also be variable, such as Accounting 491-1 to 6. Variable credit courses which have a number of credit hours per semester or per topic which is limited, have those limits in parentheses following the total maximum hours of credit. An example of such a course is Administration of Justice 492-2 to 6 (2 to 3 per section).

Next is the title, followed by a description of the course. If certain requirements must be satisfied before enrollment in a course, they are listed as prerequisites. If a course is a part of the pass/fail system, it is so indicated.

Not all of the courses described here are offered every semester or even every year. To determine when and where a course is to be offered, consult the schedule of classes obtainable from your academic adviser.

Course Fees

Some courses have fees attached to their registration. These fees cover such items as laboratory fees, field trips, printing of materials, and supplies. These fees are published in the class schedule but are subject to change. For the correct fee, contact the department that offers the class or Admissions and Records.

Accounting (ACCT)

208-3 Business Data Analysis. (Same as Management 208). Uses of data in policy formulation are discussed. Emphasis is placed on the conversion of raw information into statistics which are useful to the decision-maker. Problems stress solution to questions typically raised in businesses. Prerequisite: Mathematics 139 or equivalent.

210-3 Accounting Principles and Control. Prevalent accounting principles and practices employed in business organizations. Accumulation of data and usefulness of reports are considered. Tax implications of business studied. Not open to students with a major in the College of Business and Administration. No credit given for 210 if credit is claimed for 220.

220-1 to 3 (1,1,1) Accounting I. Three sequential one credit courses which, in the aggregate, cover the basic concepts, principles and techniques used to generate accounting data and financial statements and to interpret and use the financial data to enhance decision making. Students must initially enroll in all three courses and must successfully complete 220a prior to beginning 220b and 220b before beginning 220c. Students who do not successfully complete all three course in the semester in which they initially enroll in the courses will receive a grade of *PR* for any of the courses not completed. Those students who receive a grade of *PR* in one or more of the courses must re-enroll in all unsuccessfully completed courses in subsequent semesters. Prerequisite: Sophomore Standing.

230-3 Accounting II. A continuation of Accounting I with emphasis on the analysis and interpretation of accounting reports including ratios and funds flow analysis. The use of accounting information for managerial planning, control, and decision making through budgeting, cost and variance analyses, and responsibility accounting. Prerequisite: for accounting majors, pass 220 or equivalent, with a grade of *B* or better; sophomore standing.

240-3 Individual Income Tax. Preparation of income tax returns. Federal income tax as applied to individuals. No credit given for 240 if credit is claimed for 341. Not open to those with a major in accounting.

321-3 Intermediate Accounting I. Current accounting principles and procedures relating to elements of financial reporting. Particular emphasis on current and fixed asset valuation. Includes learning Lotus 1-2-3. Prerequisite: junior standing and limited to business majors (not pre-business) or consent of school; pass 220 and 230 or equivalent with a grade of B or better.

322-3 Intermediate Accounting II. Continuation of the study of accounting principles and procedures with emphasis on liabilities, corporate capital, and income determination. Preparation and use of special statements; analysis and interpretation of statements. Prerequisite: junior standing and limited to business majors (not pre-business) or consent of school; passed 321 with grade of C or better.

331-3 Cost Accounting. Interpretation and managerial implications of material, labor, and overhead for job order, process and standard cost systems, cost-volume-profit relationships, direct costing, and budgeting. Accounting for complex process production flows, joint and by-products, spoilage, and scrap. Responsibility accounting and reporting. Prerequisite: junior standing and limited to business majors (not pre-business) or consent of school; for accounting majors, pass 230 with a grade of B or better.

341-3 Introduction to Taxation. Background, principles, and procedures for the determination of taxable income as a basis for federal income tax. Particular attention is given those aspects which are at variance with usual accounting treatment in the determination of net income. Includes practice in the methodology of tax solutions. No credit given for 341 if credit is claimed for 240. Prerequisite: junior standing and limited to accounting majors or consent of school; for accounting majors, a grade of B or better in both 220, 230 or equivalent courses.

361-3 Auditing. Standards, objectives, and procedures involved in examining and reporting on financial statements of business organizations. Prerequisite: junior standing and limited to accounting majors or consent of school; a grade of C or better in 322.

421-3 Advanced Accounting. Accounting principles and procedures relating to specialized topics, including partnership equity, installment and consignment sales, fiduciaries, international operations, branches, and business combinations. Prerequisite: junior standing and limited to accounting majors or consent of school; a grade of C or better in 322.

431-3 Advanced Cost Accounting. Managerial decision making; profit planning and control through relevant costing, return on investment and transfer pricing, determination of cost behavior patterns, analysis of variances, capital budgeting, inventory models, probabilities, statistical methods, and operations research. Prerequisite: junior standing and limited to accounting majors or consent of school; 331 with grade of C or better.

441-3 Advanced Tax. Study of income tax problems which arise from sole proprietorship, partnership, corporation, estate, and trust of organization. Brief study of social security, federal and state estate tax and gift tax. Student does research in source materials in arriving at solutions of complicated problems. Prerequisite: junior standing and limited to accounting majors or consent of school; 341 with grade of C or better.

451-3 Accounting Systems Operation. The study of accounting information systems, their technology and the management decision process supported by those systems. Prerequisite: junior standing and limited to accounting majors or consent of school; a grade of C or better in both Accounting 322 and 331; Computer Science 212 or Information Management Systems 229.

461-3 Advanced Auditing. The study and application of selected auditing concepts and techniques. Hands-on application will be emphasized. Prerequisite: junior standing Accounting 361 with grade of C or better.

471-3 Accounting for Public Organizations. Financial and managerial accounting concepts peculiar to the planning and administration of public and quasi-public organizations, such as governmental units, institutions, and charitable organizations. Includes the conventional budgetary-appropriation process, as well as some of the more recent accounting developments related to public decision making. Prerequisite: for accounting majors, 230 with grade of B or better.

491-1 to 6 Independent Study in Accountancy. Independent study of specialized aspects of accountancy not available through regularly scheduled courses. Not for graduate credit. Prerequisite: a grade of C or better in each of 322, 331, 341, and consent of school.

495-3 Internship. Supervised work experience in professional accounting. Prerequisite: outstanding record in accounting and recommendation of the school committee on internship. Mandatory Pass/Fail only. Not for graduate credit.

Administration of Justice (AJ)

201-3 Introduction to Criminal Justice System. Survey of the agencies and processes involved in the administration of criminal justice. The history of English law; the criminal justice process and system, including underlying ideologies, procedures, fundamental legal concepts, and the roles and functions of police, courts, and correctional services.

203-3 Crime, Justice and Social Diversity. (University Core Curriculum) This course examines how social heterogeneity and inequality influence the processes involved in the definition and regulation of behavior through law, particularly the criminal law. Factors such as race, ethnicity, gender and class are related to definitions of crime and justice, and to the likelihood of being the victim of crime. The differential influence of the operations and outcomes of the criminal justice system on diverse groups in U.S. society is emphasized.

290-3 Introduction to Criminal Behavior. Multidisciplinary study of the etiology and patterning of offender behavior.

300-3 Assessment of Offenders. Introduction to the procedures and issues of identifying and evaluating individual differences in offenders and among classes of offenders; analysis of typical diagnostic methods. Prerequisite: 201 and 290 or consent of instructor.

301-3 Human Relations in Criminal Justice. Delineation of major interactive patterns among staff members, between staff and clients, and among clients of probation and parole agencies and correctional agencies; introduction to problems of communication, bureaucracy, and leadership. Prerequisite: 201 and 290 or consent of instructor.

302-3 Introduction to Criminal Justice Administration. An introduction to the principles of administration and organization of criminal justice agencies. Prerequisite: 201 and 290 or consent of instructor.

303-3 Behavioral Aspects of Investigation. Principles of behavioral science are applied to the recurrent patterns of criminal investigation as a social and fact-finding process; survey of criminalistics. Prerequisite: 201, 290 or consent of instructor.

306-3 Policing in America. Examines police as part of society's official control apparatus. Major topics include historical development of the police, role of the police in the criminal justice system, functions and effectiveness of the police, and the relationship of the police to the communities they serve. Prerequisite: 201 and 290 or consent of instructor.

310-3 Introduction to Criminal Law. The nature and theories of law and social control; legal reasoning and case analysis; simple legal research; statutory construction; principles and history of punishment; constitutional, historical, and general legal principles applicable to the criminal law. Prerequisite: 201 and 290 or consent of instructor.

316-3 Introduction to Criminal Justice Research. A basic introduction to the scientific perspective, relationship of research and theory, research design, measurement issues, reporting of research and program evaluation. Emphasis on problems peculiar to criminological research. Prerequisite: 201 and 290 or consent of instructor.

317-3 Data Analysis in Criminal Justice. Covers basic statistical issues such as properties of single variables, association between pairs of variables, and statistical inference in relation to criminal justice data. Additional topics, such as analysis of aggregated data and prediction, address specific criminal justice concerns. Prerequisite: 201, 290, and 316 or consent of instructor.

320-3 Prosecution and Adjudication. Examination of the structure and process involved in the prosecution, adjudication, and sentencing of criminal defendants. The exercise of prosecutorial and judicial discretion is analyzed, with emphasis placed on understanding the influence of legal, organizational, and environmental contexts on decision-making. Prerequisite: 201 and 290 or consent of instructor.

344-3 Drug Use. Types of drugs, drug impact on the American culture, legal and illegal uses of drugs, offenses related to drug use, reaction of the criminal justice system to drugs and drug users, and the treatment and prevention programs coping with drug use. Prerequisite: 201 and 290 or consent of instructor.

348-3 Treatment Modalities. Various treatment methods used throughout the criminal justice system. Explanation and evaluation of various treatment techniques; e.g., behavior modification, transactional analysis and other individual and group therapies. Prerequisite: 201 and 290 or consent of instructor.

350-3 Introduction to Private Security. Examines the roles and functions of proprietary and contact security, loss prevention and asset protection measures in the private sphere. Emphasis is placed on examining contemporary events and factors which influence how, when and why security measures can be applied and measuring their contribution and effectiveness. Prerequisite: 201 and 290 or consent of instructor.

384-3 Introduction to Corrections. (Same as Sociology 384.) Examination of the historical context, philosophical concepts, and major developments which have shaped corrections in the United States. Various sentencing options, correctional approaches and programs, the role of corrections in the larger criminal justice system, and contemporary correctional issues are examined. Prerequisites: 201 and 290.

390-1 to 4 Readings in the Administration of Justice. In-depth, introductory and advanced readings in areas not covered in other Administration of Justice courses. The student must submit a statement describing the topic and relevant reading materials to the faculty member sponsoring the student's readings. Prerequisite: 201 and 290 and consent of instructor.

395-3 to 15 Supervised Field Experiences in the Administration of Justice. Familiarization and direct experience in applied settings. Under supervision of faculty and adjunct staff, the student assumes a student-participant role in the criminal justice agency. Student must submit internship application during the first thirty days of the preceding spring or fall semester. Prerequisite: 201, 290, 12 additional hours of administration of justice courses at SIUC; minimum gpa of 2.5 overall in Administration of Justice courses prior to the internship experience or consent of department. Mandatory Pass/Fail.

402-3 Group and Family Treatment in Criminal Justice. Presentation of theoretical knowledge and practical techniques utilized in major group and family treatment approaches for adults and juveniles in institutions, community-based correctional programs, and transitional living situations. Prerequisite: 201, 290, and 316 or consent of instructor.

403-3 to 9 (3 per topic) Enforcement Operations. (a) Advanced investigation; (b) Enforcement management; (c) Enforcement discretion. Each course topic focuses on a major theme in law enforcement. Prerequisite: (a), (b), and (c): 201, 290 306 and 316 or consent of instructor; additionally for (a) 303; and for (b) 302.

408-3 Criminal Procedure. An introduction to the procedural aspects of criminal law pertaining to police powers in connection with the laws of arrest, search and seizure, the exclusionary rule, civil liberties, eavesdropping, confessions, and related decision-making factors. Prerequisite: 201, 290, 310, and 316 or consent of instructor.

415-3 Prevention of Crime and Delinquency. Multidisciplinary analysis of the functions, goals, and effectiveness of measures to forestall delinquency and crime. Etiology of delinquent behaviors as related to community institutions such as police, courts, corrections, mental health clinics, schools, churches, and citizen groups. Prerequisite: 201, 290 and 316 or consent of instructor.

418-3 Criminal Violence. Examination of historical, comparative, cultural and social structural aspects of homicide, robbery, rape and assaults. Course focuses on trends and patterns in criminal violence, the role of firearms, victim/offender relationships and post-arrest processing of the offender in the criminal justice system. Prerequisite: 201, 290 and 316 or consent of instructor.

450-3 Public and Private Security. An overview of important issues related to security and loss prevention in the public and private sectors. Covers security's historical development, its current role, and the relationship between the public and private sectors. Prerequisite: 201, 290, 316 and 350 or consent of instructor.

451-3 Forensic Interrogation. Forum on forensic interrogation. Conceptual framework for understanding behavioral and psychological aspects of the process; discussion of historical and philosophical development, use in criminal and private security investigations, legal proceedings, and role in a democratic society. Provides both theoretical grounding and hands-on experience. Prerequisite: 201, 290, and 316 or consent of instructor.

460-3 Women and the Criminal Justice System. (Same as Women's Studies 476.) Addresses the topics of women as offenders, as victims and as workers in the criminal justice system. Prerequisite: 201, 290, and 316 or consent of instructor.

473-4 Juvenile Delinquency. (See Sociology 473.) Prerequisite: 201, 290, and 316 or consent of instructor.

474-3 Juvenile Justice. The evolving definition of juvenile misbehavior and the legal mechanisms that have emerged to control it. The problems and promise of juvenile justice in terms of the juvenile code and court, law enforcement, custodial and treatment institutions, and community treatment. Prerequisite: 201, 290, and 316 or consent of instructor; 473 or equivalent is recommended.

476-3 Crime and Criminal Justice: International Dimensions. Examination of sociocultural and political factors shaping criminality and responses to crime around the world. Similarities and differences in criminogenic conditions and practices of law enforcement and corrections are traced. Prerequisite: 201, 290, and 316 or consent of instructor.

477-3 Theoretical Analysis of Crime. Examination of theories of crime and criminality. Major topic areas include types of theories, the development and testing of theories, explanations of the kinds and degrees of crime observed in society, and explanations of processes involved in the development of criminal behavior. Emphasis is on current directions in theories of crime. Prerequisite: 201, 290, 316 or consent of instructor.

484-3 Correctional Institutions. (Same as Sociology 484.) Examination of the roles, purposes, structures and functioning of institutional corrections within the United States. Emphasis is placed on understanding the philosophies, elements, structures and programs that shape current institutional operations and their impact on offenders, staff and the community. Prerequisite: 201, 290, 316 or the consent of instructor.

485-3 Corrections and the Community. Traditional correctional functions are redefined to emphasize the development of resources in communities, diversion of convicted offenders from institutions, and direct involvement of correctional programs in community affairs. Prerequisite: 201, 290, and 316 or consent of instructor.

490-1 to 3 Independent Study in the Administration of Justice. Supervised readings or independent research projects in various aspects of crime control, treatment of offenders, and the management of criminal justice programs and agencies. May be repeated up to a maximum of three credit hours. Prerequisite: 201, 290, and 316 and consent of the instructor.

492-3 Contemporary Issues in Administration of Justice. A forum, geared toward seniors majoring in administration of justice, that focuses on criminal justice issues of concern to students and faculty. May re-enroll for a maximum of six credits. Satisfies the CoLA Writing-Across-the Curriculum requirement. Prerequisite: 201, 290, and 316 and consent of instructor.

Advanced Technical Studies (ATS)

258-1 to 30 Work Experience Credit. Credit granted for job skills, management-worker relations and supervisory experience for past work experience while employed in industry, business, the professions, or service occupations. Credit will be established by department evaluation.

259-1 to 60 Occupational Education Credit. A designation for credit granted for past occupational educational experiences related to the student's educational objectives. Credit will be established by departmental evaluation.

319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

320-1 to 10 Work Study Internship. Provides work-study students with an opportunity to participate in an on-campus work experience related to their academic program and career objectives. Hours and credits are to be individually arranged. Mandatory Pass/Fail.

321-3 Seminar in Applied Sciences and Arts. This course is designed to allow College of Applied Sciences and Arts' students to become knowledgeable of specific and current requirements in the profession to which they aspire. Subject matter will be determined by academic major.

332-3 Labor-Management Problems. Students will gain a general understanding of the economic situation of which labor-management problems represent a subset. They will develop a perspective on the evolution of labor relations in the United States economy and on how the interaction of labor and management differs throughout the world. The collective bargaining section introduces the student to the techniques of bargaining used by labor and management in their ongoing interactions. Lecture three hours.

350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations of-

ferred through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. This course may be classified as independent study. Prerequisite: consent of instructor.

361-3 Fiscal Aspects of Technical Management. An introduction to fiscal structures and problems encountered in the technically oriented enterprise. Lecture three hours.

362-3 Legal Aspects of Technical Management. An introduction to the types of legal problems encountered in the technically oriented enterprise. Lecture three hours.

363-3 to 15 (3,3,3,3,3) Special Topics in Technical Management. Specialized study for the investigation of management problems relating to the student's career objective. (a) Management field experience. Structured practical experience in a controlled management environment. (b) Research management applications. Studies of management techniques as practiced in the profession. (c) Comparison analysis of organizational strategies in the professions. (d) Current trends. Readings regarding economic trends impacting upon the business or profession. (e) Employee relations. Study of the techniques of employee relationships to include the dynamics and procedures required for managing the work center. Need not be taken sequentially.

364-3 Work Center Management. A study of the problems of managing a small working unit (division, department, work center, section, etc.) within a larger unit (agency, company, regional office, etc.). Included items will be work center goals identification, staffing needs, monitoring of work process reporting, work center communications, and interpersonal relations within the work center. Lecture three hours.

383-3 Data Interpretation. A course designed for students beginning their major program of study to examine data use in their respective professions. Emphasis will be placed upon an understanding of the basic principles and techniques involved with analysis, synthesis, and utilization of data. Prerequisite: University Core Curriculum mathematics requirement or consent of major department.

412-3 Grantsmanship. Provides the student with an understanding of the availability of public and private funding in a specific technical area, how to apply for such funds, the process for approving such applications for funding, how the grants are administered once awarded, and who the funding agencies, companies, or foundations are. Each student will prepare a grant proposal including objective statements, study methodology, work program, work schedule, program budget, end products, and overall packaging. Not for graduate credit.

416-3 Applications of Technical Information. This course is designed to increase student competence in analyzing and utilizing various types of technical information encountered by managers in technical fields. Not for graduate credit. Prerequisite: English 101 or consent of department.

421-3 Professional Development. Introduces students to the various elements involved in obtaining a position in their chosen career field. Topics included are: personal inventories, placement services, employment agencies, interviewing techniques, resumes, letters of application, references, and employment tests. Each student will develop a portfolio including personal and professional information related to individual career goals. Not for graduate credit. Prerequisite: enrollment in the College of Applied Sciences and Arts baccalaureate program or consent of instructor.

426-3 Technology and International Trade. The international trade of products and services is studied by examining the technology development and transfer concerns of transnational corporations and national governments in industrialized, newly industrialized and developing countries.

464-3 Managing For Quality. The course focuses on management techniques used to upgrade the level of quality of products and services in organizations. Topics cover the process of continuous quality improvement: strategies and objectives, quality measures, participative management practices, worker empowerment, customer preferences and expectations, vendor/supplier inputs, process technology outputs, integrated feedback loops, and quality audits and review. Lecture three hours. Prerequisite: 364 or consent of instructor.

483-3 Design of Process Control Systems. Specialized study of the design of quality control for the improvement of processes and to enhance product or service outcomes. Instruction will focus on the construction of Statistical Process Control (SPC) diagrams and charts appropriate to the technologies found in various types of work environments. The major course project requires students to design aspects of an SPC program based on their specialty area. Lecture three hours. Prerequisite: 383 or consent of instructor.

Aerospace Studies (AS)

101-1 The Air Force Today. Survey course briefly treating chief topics relating to the Air Force and defense. It focuses on the organizational structure and missions of Air Force organizations, officership and professionalism and includes an introduction to communicative skills. Prerequisite: concurrent enrollment in 101a, Leadership Laboratory.

101A-1 Leadership Laboratory. Weekly laboratory consisting of Air Force customs and courtesies, health and physical fitness, and drill and ceremonies. Prerequisite: concurrent enrollment in 101.

102-1 The Air Force Today. Survey course briefly treating chief topics relating to the Air Force and defense. Focuses on the organizational structure and missions of Air Force organizations, officership and professionalism and includes an introduction to communicative skills. Prerequisite: concurrent enrollment in 102a, Leadership Laboratory.

102A-1 Leadership Laboratory. Weekly laboratory consisting of Air Force customs and courtesies, health and physical fitness, and drill and ceremonies. Prerequisite: concurrent enrollment in 102.

201-1 The Development of Air Power. Focuses on factors contributing to the development of air power from its earliest beginnings through two world wars; the evolution of air power concepts and doctrine and an assessment of communicative skills. Prerequisite: concurrent enrollment in 201a, Leadership Laboratory.

201A-1 Leadership Laboratory. Weekly laboratory consisting of Air Force customs and courtesies, health and physical fitness and field training orientation. Prerequisite: concurrent enrollment in 201.

202-1 The Development of Air Power. Focuses on factors contributing to the development of air power from its earliest beginnings through two world wars; the evolution of air power concepts and doctrine and an assessment of communicative skills. Prerequisite: concurrent enrollment in 202a, Leadership Laboratory.

202A-1 Leadership Laboratory. Weekly laboratory consisting of Air Force customs and courtesies, health and physical fitness and field training orientation. Prerequisite: concurrent enrollment in 202.

258-4 Field Training Equivalency. Work experience credit for 101, 102, 201, and 202. This credit will be evaluated by the Department of Aerospace Studies. Prerequisite: satisfactory completion of either the four-week or six-week field training course for AFROTC POC applicants.

301-3 Air Force Leadership and Management. Study of leadership and quality management fundamentals, professional knowledge, leadership ethics and communicative skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts being studied. Prerequisite: concurrent enrollment in 301a, Leadership Laboratory. Non-AFROTC members may enroll with instructor consent.

301A-1 Leadership Laboratory. Weekly laboratory consisting of advanced leadership experiences in officer-type activities, giving students the opportunity to apply the principles learned. Prerequisite: concurrent enrollment in 301.

302-3 Air Force Leadership and Management. Study of leadership and quality management fundamentals, professional knowledge, leadership ethics and communicative skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situations as a means of concepts being studied. Prerequisite: concurrent enrollment in 302a, Leadership Laboratory. Non-AFROTC members may enroll with consent of instructor.

302A-1 Leadership Laboratory. Weekly laboratory consisting of advanced leadership skills in officer-type activities, giving students the opportunity to apply leadership and management principles. Prerequisite: concurrent enrollment in 302.

351-2 Field Work Experience. Approved field work experiences with an Air Force or Department of Defense-related installation gives students opportunities to apply classroom theory to an active duty environment. Prerequisite: 302 or consent of department chair.

401-3 American Foreign Policy. Examines the need for national security, analyzes the evolution and formulation of the American Defense policy, strategy and joint doctrine; investigates the methods for managing conflict; overviews regional security, arms control and terrorism. Within the structure, continued emphasis is given to the refinement of communicative skills. Not for graduate credit. Prerequisite: concurrent enrollment in 401a, Leadership Laboratory. Non-AFROTC members may enroll with consent of instructor.

401A-1 Leadership Laboratory. Weekly laboratory consisting of advanced leadership experiences in officer-type activities. Not for graduate credit. Prerequisite: concurrent enrollment in 401.

402-3 Civil-Military Relations. Examines the military as a profession, officership, the military justice system and current issues affecting military professionalism. Within this structure, continued emphasis is given to the refinement of communicative skills. Not for graduate credit. Prerequisite: concurrent enrollment in 402A, Leadership Laboratory. Non-AFROTC members may enroll with consent of instructor.

402A-1 Leadership Laboratory. Weekly laboratory consisting of advanced leadership experiences in officer-type activities. Not for graduate credit. Prerequisite: concurrent enrollment in 402.

471-1 to 3 Independent Study. Supervised study or project to improve skills or to explore interests related to professional development of an Air Force officer. Not for graduate credit. Pass/Fail only. Prerequisite: 301 or concurrent enrollment or consent of department chair.

491-1 to 8 Advanced Leadership Skills. Student applies special skills or interests to the professional environment of an Air Force officer. Original research or project to deal with current aspect of Air Force duty required. Amount of credit dependent on work involved. Not for graduate credit. Pass/Fail only. Aerospace Studies elective only. Prerequisite: 301 or concurrent enrollment and consent of department chair.

Agribusiness Economics (ABE)

204-3 Introduction to Agricultural Economics. Agriculture in local and national economy; distribution; size and organization of the farm business units; policies affecting agriculture.

257-1 to 10 Work Experience. Credit for on-campus work experience through a cooperative program developed between the department and the Office of Student Work and Financial Assistance. Prerequisite: consent of chair. Mandatory Pass/Fail.

258-1 to 30 Past Work Experience. Credit for career related employment based on the evaluation of the documentation of this experience by the Department of Agribusiness Economics. No grade for past work experience. Prerequisite: consent of chair.

302-2 Country Living Management and Information. Managing a small acreage as an avocation. Types of decision problems and sources of information.

318-3 Agribusiness Statistical Methods. Statistical methods applied to agribusiness economics, including survey design, sampling, graphic presentation of data, index numbers, statistical inference, basic linear regression and correlation.

333-3 Professional Agri-selling. Focuses on professional Agri-selling and the sales process. Topics include different methods of selling, steps and techniques in the selling process, customer service, sales ethics, consumer behavior concepts and sales management. Critical skills of self-management, communication, and interpersonal values are examined. Opportunities of a career in Agri-selling are surveyed.

340-3 Food and Agricultural Policy. An economic analysis of the structure, problems, and alternative public policies of the food production industry. Emphasis on price, income, foreign trade, and development policies. Prerequisite: 204 or consent of instructor.

350-3 Farm Management. Efficient organization and management of a farming operation. Emphasis on crop and livestock selection, management of farm resources, farm budgets and records analysis, and farm leases. Student will incur field trip expenses not to exceed \$5. Prerequisite: 204 or one course in economics.

351-3 Financial Management in Agriculture. Analysis of the capital structure of agriculture and sources of capital. Credit analysis of agribusiness firms using financial statements, firm growth, capital budgeting, and tax considerations. Prerequisite: 204 or equivalent.

359-1 to 6 Intern Program. Supervised work experience program in either an agricultural agency of the government or agribusiness. Prerequisite: junior standing or consent of instructor. Mandatory Pass/Fail.

360-3 Cooperatives and Agribusiness Management. Problems and practices in agribusiness operations including forms of organization, alternative organization and structure impacts on decision making, tools of decision making, financial analysis and methods of improving the effectiveness of the marketing system. Prerequisite: 204 or equivalent.

361-3 Agribusiness Marketing Management. An overview of marketing practices and strategies employed by agribusiness product and service firms. Market research, market segmentation and product mix development are among the topics reviewed. Students participate in case analysis and marketing plan development projects. Prerequisite: 204 or equivalent.

362-3 Marketing and Pricing Agricultural Products. Institutional arrangements in marketing agricultural products. Market structure, marketing costs, and alternative methods of pricing agricultural products are also examined. Prerequisite: 204 or equivalent.

363-3 Commodity Futures Market. The mechanics of futures market trading, a description of institutions, technical and fundamental analysis, speculation, hedging, spreading, and market risk. Agricultural commodities, exchange rates, and financial instruments are considered.

381-1 to 4 (1,1,1,1) Agricultural Seminar. Discussion of special topics and/or problems in the field of agribusiness economics. Prerequisite: junior standing and consent of department.

388-1 to 16 (1 to 8 per semester) International Studies. Course work undertaken as a part of an approved University residential study program abroad. May be taken for a maximum of eight semester hours per semester and may be repeated for a maximum of 16 semester hours. Prerequisite: major department or program approval.

390-1 to 4 Special Studies in Agribusiness Economics. Assignments involving research and individual problems. Field trips. Prerequisite: consent of chair.

391-1 to 4 Honors in Agribusiness Economics. Completion of honors paper or comparable project under the supervision of one or more faculty members. Subject matter depends upon the needs and interests of the student. Prerequisite: junior, gpa 3.0 with a 3.25 in major; approval of staff member, department chair.

401-3 Agricultural Law. Relations of common-law principles and statutory law to land tenure, farm tenancy, farm labor, farm management, taxation, and other problems involving agriculture. Prerequisite: junior standing or consent of instructor.

402-1 to 6 Problems in Agribusiness Economics. Designed to improve the techniques of agribusiness economics workers through discussion, assignment, and special workshops on problems related to their field. Emphasis will be placed on new innovative and currently developed techniques for the field. Prerequisite: consent of chair.

419-3 Agribusiness Economic Applications of Information Technology. Students will gain experience in applying information technology to a range of agribusiness-economic applications in the subject areas of record keeping, management, finance and marketing. Students will gain additional experience by integrating these applications in the development of a business plan. Not for graduate credit. Prerequisite: 350 or 351 or 360 and Agricultural Education and Mechanization 318 or equivalent.

440-3 Land Resource Economics. The use of land as an economic variable in production of goods and services; land markets; public versus private land use conflicts; and land-use planning in an institutional setting. Prerequisite: 12 hours of agricultural economics or economics credit, or graduate status or consent of instructor.

444-3 Agricultural Development. Analysis of the economic, social, political, cultural, and institutional factors related to economic growth and development in agricultural sector. Framework for evaluating outcome of alternative strategies in agricultural production, marketing, and government policies that affect output, income distribution, and resource use in agriculture and the related agroindustrial complex. Prerequisite: 204.

450-3 Advanced Farm Management. Application of production economic principles and modern decision-making techniques to farm management problems. The importance of information, sources of agricultural risk and management of risk in farm planning will be integrated. Prerequisite: 350 or equivalent and University Core Curriculum mathematics required.

451-2 Farm Real Estate Appraisal. Principles and practices of farm real estate appraisal. Application of capitalization, market, and cost approaches for estimating market value. Understanding of special valuation methods used for buildings, insurance, assessments, loans, and condemnation. Field trips not to exceed \$10. Prerequisite: 350 or consent of instructor.

453-3 Agribusiness Planning Techniques. Application of mathematical programming to agribusiness and farm planning, including enterprise selection, resource allocation, least cost ration formulation, decision making under risk and uncertainty, transportation and location problems. Emphasis placed on modeling problems and interpretation of results. Prerequisite: junior standing or consent of instructor.

460-3 Agricultural Prices. Measurement and interpretation of factors affecting agricultural prices. Construction of index numbers, trend analysis, seasonal and cyclical price movements and the measurement of relationships between price and other variables. Prerequisite: 362 or equivalent.

461-3 Agriculture Business Management. Examination of agribusiness firm management with emphasis on the management and control of financial resources and the interrelationship between the agribusiness firm and human resource management. Other topics in agribusiness will include effective communication in the management process, business ethics, and workable credit programs for customers. Prerequisite: 351 and 360 or equivalent.

462-3 Advanced Agricultural Marketing. Advanced treatment of marketing issues from both theoretical and practical decision-making perspectives. Marketing margins, intertemporal, and spatial price relationships are reviewed in detail. Historical and current grain and livestock price series are utilized in decision-making exercises. Prerequisite: 362 or equivalent.

470-3 Interdisciplinary Approaches to Environmental Issues. Application of concepts from the biological, physical and social sciences, economics, humanities and law, used to understand the interdisciplinary complexities of environmental issues. Students will develop and demonstrate problem-solving skills as part of a team analyzing a regional environmental issue. Team-taught seminar style discussions. Not for graduate credit. Prerequisite: Plant Biology 301i and admission to Environmental Studies minor program.

Agricultural Education and Mechanization (AGEM)

170-4 Introduction to Physical Principles in Agriculture. An analytical introduction to physical and mechanical principles related to agricultural land measurement, power and machinery, electricity and electronics, structures, environment and handling of agricultural materials.

180-1 to 2 (1,1) Introduction to Agricultural Communications Experience. Study, observation and participation in (a) agricultural news activities, (b) graphic/photographic activities of an agricultural extension communication office. Prerequisite: consent of instructor.

257-1 to 10 Work Experience. Credit for on-campus work experience through a cooperative program developed between the department and the Financial Aid Office. Prerequisite: consent of chair. Mandatory Pass/Fail.

258-1 to 30 Past Work Experience. Credit for career related employment based on the evaluation of the documentation of this experience by the Department of Agricultural Education and Mechanization. No grade for past work experience. Prerequisite: consent of chair.

274-2 Skills in Home Maintenance and Repair. Common home related maintenance and repair activities. Units include safety and developing the home shop; construction skills related to masonry, concrete, plumbing and painting; basic electricity and practical home wiring; and lawn, garden and recreational equipment maintenance and operation.

311-6 (3,3) Agricultural Education Programs. Nature and scope of the different programs involved in teaching agricultural occupations and methods of developing them.

314-3 Agricultural Information Programs. Preparation for an agricultural information internship; an in-depth study into the nature, scope, integral parts, and methods of a total agricultural information program.

318-3 Introduction to Computers in Agriculture. An introductory course about the use and role of computers in agriculture. The major thrust includes a basic understanding and application of micro-computers in agriculture with special emphasis on how to save time, money, and increase efficiency in agriculture.

359-1 to 6 Intern Program. Supervised work experience in either an agricultural agency of the government or agribusiness. Prerequisite: junior standing or consent of instructor. Mandatory Pass/Fail.

362-3 Small Engines and Power Equipment. A basic agricultural power course emphasizing engine principles, service and application of light power equipment such as lawn and garden, machines, power units, chain saws and small tractors.

363-3 Applied Agricultural Electricity. The course is intended to develop a working knowledge and basic skills in the application and use of the National Electric Code and Agricultural Wiring Handbook for electrical service systems. Both single and three phase electrical, service, circuits and automated systems will be planned and constructed. Safety is emphasized.

364-3 Leadership of Youth and Peer Groups. (See Workforce Education and Development 364.)

371-2 Surveying and Planning. Surveying, mapping, land measurement, contouring, planning waterways and terraces and other water control structures used in the development and conservation of forests and agricultural land.

372-4 Agricultural Production Machinery Management. A machinery management course related to capacities, application, operation, safety, performance, adjustments, calibration and maintenance. Problem solving is emphasized. Prerequisite: 170.

374-2 Applied Graphics. Fundamentals of interpreting graphic illustrations, sketching, drawing, and lettering in agriculture, forestry, and landscape design.

380-1 to 2 (1,1) Agricultural Communications Seminar. Readings, discussions, and activities related to (a) current problems, issues, and practices in agricultural communication, (b) career opportunities, professional development, and ethical standards in agricultural communication. Prerequisite: junior and senior standing and consent of instructor.

381-1 to 4 (1,1,1,1) Agricultural Seminar. Discussion of special topics and/or problems in the field of agricultural education and mechanization. Prerequisite: junior standing and consent of department.

384-3 Agricultural Shop and Construction Processes. Principles of shop organization and safety; tool and equipment utilization as related to hot and cold metals, woodworking, plumbing, and concrete construction. There is a \$15 additional charge for this course.

388-1 to 16 (1 to 8 per semester) International Studies. Course work undertaken as part of an approved University residential study program abroad. May be taken for a maximum of eight semester hours per semester and may be repeated for a maximum of 16 semester hours. Prerequisite: major department or program approval.

390-1 to 4 Special Studies in Agricultural Education and Mechanization. Assignments involving research and individual problems. Field trips. Prerequisite: consent of chair.

391-1 to 4 Honors in Agricultural Education and Mechanization. Completion of honors paper and comparable project under the supervision of one or more faculty members. Subject matter depends upon the needs and interests of the student. Prerequisite: junior, gpa 3.0 with a 3.25 in major; approval of staff member, department chair.

402-1 to 12 (1 to 6 per topic) Problems in Agricultural Education and Mechanization. (a) Agriculture education, (b) agriculture mechanization. Designed to improve the techniques of agricultural education and mechanization workers through discussion, assignment, and special workshops on problems related to their field. Emphasis will be placed on new innovative and currently developed techniques for the field. A limit of six hours will be counted toward graduation in master's degree program. Prerequisite: consent of chair.

411-3 Program Development in Agricultural Extension. Principles and procedures in developing extension programs with emphasis on program determination and methods. Prerequisite: junior standing.

412-3 Methods of Agriculture Mechanization. Theory and use of educational materials and devices adaptable to the needs and interests of educators involved in agricultural mechanization laboratories. There is a \$15 laboratory fee for this course.

414-3 Adult Education Procedures, Methods, and Techniques. Determining adult education needs and interests of the community. Securing and organizing the information needed for adult education programs and planning teaching activities.

415-3 Beginning Teacher Seminar. The application in the professional field setting, of principles and philosophies of the education system. Includes application of principles of curricula construction, programming student and community needs. Prerequisite: consent of instructor.

418-3 Applications of Integrated Software/Agriculture. Design of agricultural or educational applications of integrated software. Spreadsheet, database, word processing, graphic and communications software will be applied to the solution of agricultural problems. Individual student projects will be the focus of the applied nature of the class. Prerequisite: junior standing or consent of instructor.

473-3 Planning Agricultural Electrical Systems. Design and plan the efficient application of electrical service to agricultural buildings and operations. National electric and local code requirements and safety are emphasized. Prerequisite: 170 or equivalent.

474-3 Advanced Agricultural Structures. A study of design characteristics, construction, methods, and environmental control applicable to agricultural structures. Design construction and environment are considered from the standpoint of the function of the building of an agricultural enterprise. Prerequisite: 384 or equivalent.

476-3 Agricultural Safety and Health. Analysis of safety and health issues important to managers and supervisors in agricultural operations. Topics include agricultural accident data, causes and effects of accidents, hazard identification, strategies for accident prevention, response to accidents, and health risks and safeguards. Developments and documentation of accident and illness prevention activities in the workplace. Prerequisite: junior standing.

483-3 Agricultural Materials Handling, Processing, and Storage. Arrangement of systems for animal waste disposal, feed handling and processing, and storage of agricultural products. Prerequisite: 373 or 384 or 473 or 474.

499-3 Agriculture Information for Elementary Teachers. A general inquiry into the agriculture literacy appropriate for elementary students. A framework for evaluating content appropriate for elementary students in the pursuit of agriculture literacy will be developed. Prerequisite: consent of instructor.

Agriculture (AGRI)

110-3 Agriculture and Society. An introductory and general inquiry about the role and characteristics of farm and off-farm agriculture in our non-agrarian society. To acquaint students with important aspects of the various fields of agriculture and agrarian relationships to our society.

259-2 to 40 Technology in Agriculture. For credit earned in technical or occupational proficiency above the high school level (by departmental evaluation).

300I-3 Social Perspectives on Environmental Issues. (Same as Liberal Arts 300i.) (University Core Curriculum) Case studies (e.g., rural village in developing nation; small town in the U.S.; city in developing nation) are used to learn how different societies and groups deal with their specific environmental issues, and how culture and economic factors affect their perspectives and actions.

323-2 Career Development in Agriculture. Explores the information necessary for a participant to enter into an agricultural career with government, business or industry. Participants will complete a personal skills assessment, a resume, research a prospective employer, complete a mock interview and negotiate employment.

333-2 Agriculture and Forestry Environmental Problems. An overview course directed at the environmental problems of food, fiber, and forest products, production and processing and their potential solutions. A team taught course within the College of Agriculture.

388-1 to 16 (1 to 8 per semester) International Studies in Agriculture. Course work undertaken as a part of an approved University residential study program abroad. May be taken for a maximum of eight semester hours per semester and may be repeated for a maximum of 16 semester hours. Prerequisite: College of Agriculture or department within the college approval.

401-3 Fundamentals of Environmental Education. (Same as Forestry 401 and Recreation 401.) A survey course designed to help education majors develop an understanding of environmental problems and an awareness of how these types of problems can be handled both inside and outside the classroom. Prerequisite: ten hours of biological science, or ten hours of recreation and/or education, or consent of instructor.

423-3 Environmental Interpretation. (Same as Forestry 423 and Recreation 423.) Principles and techniques of natural and cultural interpretation. Two hours lecture, three hours laboratory. Approximately \$10 cost for field trips. Prerequisite: ten hours biological science or ten hours of recreation.

450-2 Farming Systems Research and Development. An introduction to farming systems, which is an interdisciplinary approach to agricultural research and development emphasizing small farms. The whole farm is viewed as a system of interdependent components controlled by the farm household. Focuses on analyzing interactions of these components as well as the physical, biological, and socioeconomic factors not controlled by the household. Techniques of analysis are applicable domestically and internationally.

481-1 International Agricultural Seminar. Discussion of special topics relating to worldwide agricultural development. Prerequisite: consent of instructor.

Allied Health Careers Specialties (AHC)

105-2 Medical Terminology. Introduction to the study of medical language with a working knowledge of the most common word roots, prefixes, suffixes in medical terminology. Emphasis placed on spelling, pronunciation, use of the medical dictionary, vocabulary building, common abbreviations, and charting terms.

124-2 Disease Conditions. Introduction to the study of diseases and disorders of the various body systems. The disease processes as they relate to bodily functions, their signs, symptoms, and treatment will be covered within the scope of medical assisting. Prerequisite: 105.

141-4 Introduction to Physiology and Human Anatomy. The student will survey the functions and structures of the nine basic body systems: circulatory, digestive, endocrine, excretory, muscular, nervous, skeletal, reproductive, and respiratory.

161-2 Infection Control. It is the responsibility of all health care workers to prevent and to help control infection. This course introduces infection control practices that are important in the prevention and spread of disease. This course will assist the successful student in the development of knowledge needed to provide quality care for patients and to protect yourself from the spread of infection. Prerequisite: anatomy and physiology.

299-1 to 16 Individual Study. Provides students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program supervisor, and division chair is required.

300-1 to 3 Seminar in Allied Health. A topical seminar conducted by staff members or distinguished guest lecturers on pertinent areas of allied health. Prerequisite: consent of instructor and department.

319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credits to be individually arranged. This course may be classified as independent study. Prerequisite: consent of instructor.

375-3 Advanced Modalities: Diagnostic, Therapeutic and Prosthetic. A course designed to provide the student with a study of advanced instrumentation and techniques involved with the Allied Health Sciences. Topics will include an introduction to the modality, theoretical and physical principles, and hands-on instruction of each instrument/technique. Prerequisite: junior standing or licensure/certification.

Animal Science (ANS)

112-2-16 (2 per semester) Introduction to Riding. For students with little or no riding experience. A combination of mounted and classroom work will introduce the rider to safe and responsible riding practices. Students will gain an understanding for the natural function of the horse under saddle and the influence of rider position and aids on horse and rider safety and comfort. Riding emphasis will involve work on basic position and aids. Classroom work will cover safety procedures, before and after riding care, and care and use of tack. Facilities/riding expenses are \$200-\$250 per class. Prerequisite: No prior riding experience required. Concurrent or prior enrollment in 219 or equivalent.

121-3 Science of Animals that Serve Mankind. A general overview of dairy, meat animals (swine, beef, sheep), poultry, and horse industries with emphasis on how meat, milk, and poultry products are produced and distributed. The general application of genetic, physiologic, and nutrition principles for the improvement of animal production to further serve people. Prerequisite: concurrent enrollment in 122.

122-1 Production and Processing Practices of the Animal Industry. Livestock facilities, demonstration of management practices of animals for human use and the processing of animal products. Can be taken without concurrent enrollment in 121.

123-1 to 8 (1 to 2 per discipline) Animal Production. (a) Beef; (b) Dairy; (c) Horse; (d) Swine. Provides students with limited previous livestock experience an opportunity to participate in the routine care and management procedures at one of the University's livestock centers.

210-3 Livestock Products and Evaluation. Processing and distribution of meat and dairy products. Consumption, nutritional value, cooking and serving of these products. Nomenclature and identification of meat cuts. Breeds, classes, and evaluation of meat and dairy animals.

212-2 to 16 (2 per semester) Riding and Position Control. Through the combination of mounted and classroom work, students will learn theory and implementation of the six rein aids and three leg aids used in riding. Students will be introduced to the principles and use of basic training aids. Mounted work will center on obtaining an independent seat and mastery of intermediate aids. Riders will begin to deal effectively with the common challenges that can arise during riding. Classroom work will cover gait recognition and control, principles and use of tack and mechanical aids. Facilities/riding expenses are \$200-\$250 per class. Prerequisite: 112 and/or permission of instructor (tryouts required); concurrent or prior enrollment in 219 or equivalent.

215-2 Introduction to Nutrition. (Same as Food and Nutrition 215.) An up-to-date study of basic principles of animal nutrition including classification of nutrients (physical and chemical properties) and their uses in order to provide the student a working knowledge of livestock nutrition in today's animal environment.

219-4 Introductory Horse Management. Designed for the beginning science student or non-science majors with an interest in horses. Information on topics related to horse selection and care coupled with laboratory experience provide essential information for the care of horses owned for pleasure.

250-3 Livestock Production and Human Values. Improvements in livestock production technology have resulted from research. These technologies contribute to the welfare of a growing population of humans. However, the application of new technologies often interact with a public perception of animals as exploited species in a manner conflicting with human values. These conflicts are discussed from a scientific and philosophical viewpoint.

312-2 to 16 (2 per semester) Riding Form and Function. Mounted and classroom work will explore principles and practices used to develop the competitive equine athlete. Advanced training aids will be presented and practiced. Goals of riding will be to develop an independent seat through knowledge of all aids, and to apply these to mounted problem solving in a variety of riding disciplines. Classroom work will emphasize the evaluation of equine form in determining ultimate athletic function and performance potential. Facilities/riding expenses are \$200-\$250 per class. Prerequisite: 212 and/or permission of instructor (tryouts required); concurrent or prior enrollment in 219 or equivalent.

315-3 Feeds and Feeding. Principles of applied animal nutrition. Ration formulation to meet specific nutrient needs of livestock. Feedstuff evaluation, including cost will be discussed. Prerequisite: University Core Curriculum mathematics.

319 -1,1 Training, Fitting and Sales Preparation. Students train and prepare yearling racehorses for sale at public auction. Students must complete both 319a and b in order to receive credit. Prerequisite: 219 and consent of instructor.

331-4 Physiology, Growth, and Development of Farm Animals. Physiology is presented using the organ system approach. Growth and development of meat animals with emphasis on bone, fat, and muscle tissue, and the factors which influence their relative rate of formation.

332-3 Animal Breeding and Genetics. The application of basic principles of genetics and breeding systems to the improvement of farm animals and poultry. Prerequisite: 121 or biology.

337-3 Animal Hygiene. Principles of prevention and control of infectious, nutritional, and parasitic disease of farm animals. Prerequisite: a course in chemistry.

359-2 to 6 (2 to 3, 2 to 3) Intern Program. Work experience program in animal production units and agricultural agencies of the government or agribusiness. Prerequisite: junior standing and consent of chair. Mandatory Pass/Fail.

380-1 to 6 Field Studies in Foreign and Domestic Animal Agriculture. A travel course to observe and study the operation and management of farms, ranches, and feedlots as well as agribusiness firms supporting animal production such as food processors, feed manufacturers, and housing or equipment companies in either the United States or foreign countries. A written report is required. The travel fee charged to the student will depend on the nature and the length of the course.

381-1 Animal Science Seminar. Discussion of problems and recent development in animal science. Prerequisite: junior-senior standing.

390-1 to 4 Special Studies Animal Science. Assignment involving research and individual problems. Prerequisite: juniors and seniors only and consent of chair.

409-4 Equine Science. Designed for students interested in the more scientific aspects of equine physiology and management. The class will take a more advanced look at anatomy and physiology of the systems of the equine and consider how they relate to selection, use, and management. Lecture and laboratory. Prerequisite: 219, 220, 331 or Physiology 310, or equivalent.

412-2 to 16 (2, 2 per discipline) Horsemastership. Designed to involve the advanced equestrian in evaluation and resolution of special problems in horse training involving one specific riding discipline: (a) Hunt seat, (b) Dressage, (c) Stock seat, (d) Saddle seat. Emphasis will be placed on the use of resistance-free training techniques. Not for graduate credit. Prerequisite: 312 or concurrent enrollment and permission of instructor. Special application. Facilities/riding expenses are \$200-\$250 per class.

415-4 Advanced Animal Nutrition. Advanced principles and practices associated with digestion, absorption, and metabolism of nutrients as related to domestic monogastrics, ruminants and horses. Prerequisite: 215 and 315.

419-4 Stable Management. Designed for the advanced equine science student planning a career in the horse field. Teaches in-depth management techniques on an applied basis. Students will have the opportunity to learn both theory and application of management in one course. One hour lecture, four hours laboratory. Laboratory fee: \$20. Prerequisite: 219, 409, and consent of department.

421-2 International Animal Production. A study of world animal production practices with emphasis on the developing countries. Adaptability of animals to environmental extremes and management practices employed to improve productivity. Prerequisite: junior standing plus 121 or one year of biological science.

430-4 Dairy Cattle Management. Application of the principles of breeding, physiology, and economics to management of a profitable dairy herd. Breeds of dairy cattle, housing, milking practices, and quality milk production. Field trip. Students enrolled will incur field trip expenses of approximately \$25. Prerequisite: 315, 332.

431-4 Reproductive Physiology of Domestic Animals. Comparative anatomy and physiology of the male and female reproductive system of domestic animals; hormones; reproductive cycles; mating behavior; gestation and parturition; sperm physiology; collection and processing of semen; artificial insemination, pregnancy tests; diseases. Prerequisite: 121 or a course in physiology.

433-4 Introduction to Agricultural Biotechnology. (Same as Plant and Soil Science 433.) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer and expression will be derived. Prerequisite: senior standing or consent of instructor.

434-2 Physiology of Lactation. Anatomy and physiology of milk secretion; endocrine control; milk precursors and synthesis; milk composition; physiology and mechanics of milking, mastitis. Offered only fall semester of odd numbered years. Prerequisite: course in physiology.

435-1 to 4 Agricultural Molecular Biotechnology Seminar. (Same as Plant and Soil Science 435) Molecular biology is rapidly making important contributions to agricultural science through biotechnology. An appreciation of the techniques of molecular biology and their application to plant improvement is important to all in agriculture and biology. The relationships between plant molecular biology and the biotechnology industry will be discussed. Presentations on particular research problems will be made. Graded S/U only

455-2 Animal Waste Management. Acquaints the student with the scope and problems involved with animal waste management, current regulations and laws on environmental protection. Principles covering waste management technology and current livestock waste management systems are presented. Field trips will be scheduled. Prerequisite: junior standing.

465-4 Swine Production. Swine production systems and management techniques including breeding and selection, reproduction, nutrition, herd health and disease prevention, housing and waste management, marketing, production costs, and enterprise analysis. Field trip. Prerequisite: 315 and 332 or consent of instructor.

485-4 Beef Production. Beef cattle production systems and management, breeding and selection, reproduction, nutrition, and herd health with emphasis on the most economical and efficient systems. Field trip. Students enrolled will incur field trip expenses of approximately \$5. Prerequisite: 315 and 332 or consent of instructor.

490-8 Horse Industry Internship. Provides the equine science students with the opportunity for diversified, practical experience in their area of career-goal interest. One semester will be spent working in a commercial horse-related industry. Not for graduate credit. Prerequisite: 409, 419, senior standing, and consent of instructor.

Anthropology (ANTH)

104-3 The Human Experience-Anthropology. (University Core Curriculum) This course explores different human lifeways around the world, past and present. It investigates the question of what is universal to all humans and the myriad ways they differ, through studying modern people, the remains of past cultures through archaeology, and human origins and physical variation.

201-3 Archaeology of Illinois. A survey of prehistoric cultural development, its causes and consequences, as seen through the archaeology of Native American cultural development in the Illinois region, from the earliest foragers to European contact.

202-3 American Cultures. (University Core Curriculum) Through studying a variety of topics, such as family, education, health care and popular culture, this course surveys the wide variety of cultures that make up the United States.

205-3 Latin American Civilizations. Introduction to three civilizations of Latin America: Mexica Aztec; Inka; and Maya. Prehispanic culture history in the lower Amazon River basin and the impact of Spanish contact and conquest on these native Latin American populations will also be discussed.

210-3 Survey of the Primates. Our closest cousins, the primates, display a remarkable diversity of social behavior, reproductive behavior, positional behaviors and diets, and live in a wide variety of environments and ecosystems. This diversity will be reviewed, with an eye to understanding its origin in the past and its anatomical basis.

221-3 The Anthropology of Sexual Behavior. Current issues of sexism and gender roles are brought into focus by a study of patterns of primate and human sexuality. Attitudinal and cultural distinctions between men and women are related to need and pressures on a cross-culture basis.

225-3 Separate Realities. Anthropological approaches to altered states of consciousness. A survey of popular and scholarly works on altered states and the functions of these states in societies, including our own.

231-3 Folklore and Modern Life. The folklore of a culture influences both the unconscious and conscious actions of people in subtle ways and each study helps to account for both the good and the bad which we see in ourselves and in others. The course introduces the student to the study of folklore and serves to emphasize the importance of the study of folk beliefs and their role in understanding our and other contemporary societies.

251-3 Anthropology Through Science Fiction. Basic concepts of anthropology are used to interpret the imaginary worlds of science fiction. Fictional alien cultures are examined to see how features of human biology, language, social organization, technology, etc. are patterned after or are different from known human cultures.

261-3 Issues in Popular Anthropology. A presentation of issues of popular interest which can be clarified through anthropological examination. Among these are the issues of creationism versus evolution, ancient astronauts, the Abominable Snowman, the lost civilization of Atlantis, primitive languages and peoples, and the diversity of sexual practices. The course traces the origins of these issues and beliefs as aspects of American popular culture.

298-1 Multicultural Applied Experience. An applied experience, service-oriented credit in American diversity involving a group different from the student's own. Difference can be manifested by age, gender, ethnicity, nationality, political affiliation, race, or class. Students can sign up for the one-credit experience in the same semester they fulfill the multicultural requirement for the University Core Curriculum or coordinate the credit with a particular core course on American diversity, although neither is required. Students should consult the department for course specifications regarding grading, work requirements and supervision.

300A-3 Introduction to Biological Anthropology. An overview of human biology, including genetics and evolutionary theory, the fossil record, non-human primate behavior and evolution, and the concept of race and biological differences in modern humans. Satisfies CoLA science requirement when taken in conjunction with 300e.

300B-3 Introduction to Anthropological Linguistics. Presents language as a facet of cultural anthropology with emphasis on the methods of linguistic analysis, language history, the functions of language in social and cultural behavior, and the variety of ways different languages classify and organize reality. Open to both majors and non-majors.

300C-3 Introduction to Archaeology. Covers basic theories and methods used in archaeology to study lifestyles of past cultures through an examination of their tools, house and community remains, and art works. Includes methods of excavation, dating techniques, and other methods of analysis. Open to both majors and non-majors.

300D-3 Introduction to Social-Cultural Anthropology. An exploration of current anthropological theories and methods for understanding human cultures from a comparative perspective; also examines human institutions such as religion, politics, and family cross-culturally. Although non-Western societies are emphasized, comparisons with our own are treated as well.

300E-1 Bioanthropology Laboratory. Applied exposure to basic concepts and issues addressed in 300a. Includes genetic inheritance, population genetics, evolutionary models, modern human variation, osteology, forensics, primate anatomy and behavior, and human evolution. May use combination of laboratory work, computer modeling and field study. One two-hour laboratory per week. Prerequisite: must be taken concurrently with 300a. Satisfies CoLA science requirement when taken in conjunction with 300a.

301-3 Language in Culture and Society. The problem of the uniqueness of human language and how it fits into culture and society. The origin and development of language. Topics covered include animal and human communication, language and world view, and the meaning of meaning.

302-3 Indians of the Americas. A region by region survey of the native Americans of North, Middle, and South America. Emphasis is on lifeways: ecology and environment, subsistence, economy, social organization, religion, art, music, and other aspects of culture. A brief introduction to pre-history and language is included.

303-2 Native American Art and Culture. A survey of native American art from traditional through contemporary forms, with a focus on the changing role that art has played in native American culture.

304-3 Origins of Civilization. This course is a survey of development of those ancient complex societies known as civilizations around the world. The emphasis is on the use of archaeological data to understand the interplay of environmental and cultural factors that led to the beginnings of agriculture, population growth, and the origins of cities. Among the early societies that may be analyzed are Mesopotamia, Egypt, China, Europe, Maya, Aztec, and Inca.

310-3 to 24 (3,3,3,3,3,3,3,3) Introduction to Peoples and Cultures. An introduction to the prehistory, cultural history, and modern cultures of peoples in the area in question. Topical emphasis may vary from course to course and year to year. (a) Africa, (b) Asia, (c) Caribbean, (d) Europe, (e) South America, (f) Near East and North Africa, (g) North America, (h) Oceania.

330-3 Biological Foundations of Human Behavior. Discussion of human sexual behavior, the opposition of violence and aggression with cooperative behavior, and the anthropological background of facts concerning whether these behaviors are driven by biological (instinctual) or purely cultural factors.

340-3 Coping in Other Cultures. Applications of anthropology to practical, daily problems faced by professionals working in other cultures. General exploration of the common misconception that one's own culture is

the best and only way to get things done, and that one's own language is the best means of communication. Case studies of professionals coping in other cultures.

341-3 Slavery and the Black Diaspora. Focuses on slavery in the Americas and the early phases of the Black Diaspora from a comparative historical and anthropological perspective; the Caribbean, Brazil, and the southern United States will be treated as well as the transatlantic slave trade.

360-3 American Culture. A study of the United States and its subcultures, using anthropological concepts and description to provide a focus for American students on their own culture and an understanding for foreign students of the complexities of American behavior, values, and social structure. Examines subcultures defined by race and ethnicity, immigrant assimilation and culture contact, and experiments in alternative living.

370-3 Anthropology and Contemporary Human Problems. The contribution of anthropology to an understanding of contemporary human problems of environmental crisis, world hunger and overpopulation, social stratification and internal order, war and international order. The approach is cross-cultural drawing on knowledge of all societies and cultures in space and time. Anthropological fundamentals are introduced at the beginning.

376-2 to 8 Independent Study in Classics Program.

402-3 People and Culture. Offered primarily for non-anthropology majors. Focuses on the nature of culture, cultural processes, and cultural change with emphasis on social, political, economic, artistic, religious, and linguistic behavior of humans as individuals and in social groups.

404-3 Art and Technology in Anthropology. An introduction to the basic ways in which people utilize the natural resources of their habitat to meet various needs, such as food, shelter, transportation, and artistic expression. The nature of art, its locus in culture, and its integration into technical society will be considered.

406-3 Conservation Archaeology. The method and theory of archaeology in relationship to local, state, and federal laws regarding the protection and excavation of antiquities. Emphasis is on problem oriented survey and excavation, as well as the preparation of archaeological contracts and the writing of reports to satisfy statutes involving environmental concerns. Prerequisite: 300c or consent of instructor.

410A-3 Applied Anthropology. The practical applications of theoretical social anthropology. Problems of directed culture change are examined from an anthropological perspective as they apply to the work of the educator, social worker, extension agent, administrator, and others who are attempting to guide change in the life ways of others in Western culture and the third world. Prerequisite: none. 300d recommended for undergraduates.

410B-3 Educational Anthropology. An examination of the cultural processes of formal and informal education, the use of anthropological premises in educational program design, bicultural-bilingual education programs, comparative American-non-American systems, and the teaching of anthropology. Prerequisite: none. 300d recommended for undergraduates.

410C-3 Economic Anthropology. The study of non-Western economic systems. Prerequisite: none. 300d recommended for undergraduates.

410D-3 Anthropology of Folklore. A comparative study of the role of folklore in various cultures of the world, with emphasis upon non-literate societies. Analysis of motifs, taletypes, themes and other elements; comparisons between non-literate and literate groups. Prerequisite: none. 300d recommended for undergraduates.

410E-3 Anthropology of Law. Anthropological thought on imperative norms, morality, social control, conflict resolution and justice in the context of particular societies, preliterate and civilized. Law of selected societies is compared to illustrate important varieties. Prerequisite: none. 300d recommended for undergraduates.

410F-3 Anthropology of Religion. A comparative study of (religious) belief systems, with emphasis upon those of non-literate societies. Examination of basic premises and elements of these belief systems, normally excluded from discussions of Great Religions. Prerequisite: none. 300d recommended for undergraduates.

410G-3 Psychological Anthropology. Similarities and differences in personality structures cross-culturally including the historical development of this as an anthropological subdiscipline. Prerequisite: none. 300d recommended for undergraduates.

410H-3 Ethnomusicology of Oceania, Asia and Africa. A survey of theory, method, structure, organology, and cultural context of the ethnomusicology of Oceania, Asia, and Africa.

410I-3 Ethnomusicology of Middle East, Europe and the New World. A survey of theory, method, structure, organology, and cultural context of the ethnomusicology of Europe and the New World.

410J-3 Kinship and Social Organization. Universal features of non-Western systems of kinship terminology and social organization. Topics include the structure and functioning of kinship systems, lineages, clans, sibs, phratries, moieties, and tribal units. Prerequisite: none. 300d recommended for undergraduates.

410K-3 Ecological Anthropology. An examination of the relationship of past and present human populations in the context of their natural and social environments. Prerequisite: 300c and 300d or equivalent.

410M-3 Healing and Culture. This course examines systems of healing and medicine from an anthropological perspective. The theory and practice of medicine in different cultures, including Western biomedicine, are considered. Particular attention is given to the ways in which medical knowledge gains legitimacy in different social contexts and the problems which arise in culturally heterogeneous arenas when different medical paradigms contend for legitimization. Prerequisite: 300d or consent of instructor.

425-3 Cognitive Anthropology. The theory of culture as cognitive organization is explored. Among the topics are: Formal analysis of lexical domains, folk classifications and strategies, the problem of psychological validity, linguistic determinism and relativity, biogenetic and psycholinguistic bases of cognition, and the new ethnography.

430A-3 Archaeology of North America. Detailed study of the early cultures of North America. Emphasis on the evolutionary cultural development of North America. Prerequisite: 300c or consent of instructor.

430B-3 Archaeology of Meso-America. Detailed study of the early cultures of Meso-America with emphasis on the evolutionary cultural development of Meso-America. Prerequisite: 300c or consent of instructor.

430E-3 Archaeology of the Eastern Woodlands. Detailed study of the early cultures of the North American Eastern Woodlands with emphasis on the evolutionary development of cultures. Prerequisite: 300c, 302, or 430a or consent of instructor.

430F-3 Archaeology of South America. Survey of the prehistory and ethnohistory of South America, including the peopling of the South American continent, the development of early cultures, the rise and fall of Andean and empires, and the impact of Spanish contact and conquest. Prerequisite: 300c or consent of the instructor.

440A-3 The Fossil Evidence for Human Evolution. An advanced consideration of the fossil evidence for human evolution and evaluation of the various theories regarding the course of human evolution. Prerequisite: 300a or consent of instructor.

440B-3 Race and Human Variation. A consideration of the range, meaning and significance of contemporary human biological variation, including evolutionary and adaptive implications and the utility of the race concept. Prerequisite: 300a or consent of instructor.

440C-3 Context of Human Evolution. This course will provide an ecological, behavioral, geological, geographic, and theoretical context from which to understand the evolutionary history of modern humans. The course is designed to complement 440a. Prerequisite: 300a or consent of instructor.

441-6 (3,3) Laboratory Analysis in Archaeology. (a) Emphasizes methods of analysis in archaeology as part of a larger research design created by the student. May be taken independently or as a follow-up to 496. (b) Emphasizes technical methods of the physical and natural sciences in archaeological analysis, as used in environmental reconstruction, dating, and for the investigation of production and exchange.

442-1 to 12 Working with Anthropological Collections. Management, curation, and analysis of anthropological collections as part of a research project created by the student. May be taken independently or as a follow-up to 450, 495, 496, or 597.

444-3 Human Genetics and Demography. A course in human genetics with an emphasis on population genetics and demography of modern and ancient human populations. Prerequisite: 300a, 400a or consent of instructor.

450-3 Museum Studies. A detailed study of museum operation to include methodology and display. Practical museum work will be stressed.

455-3 to 27 (3 per topic) Topics in Bioanthropology. Intensive study of one of the major subfields within biological anthropology. Topical areas include: (a) Dental Anthropology. (b) Laboratory Methods. (c) Primate Behavior and Ecology. (d) Quantitative Methods. (e) Biomedical Anthropology. (f) Human Growth, Development, and Adaptation. (g) Primate Biology and Evolution. (h) Osteology. (i) Comparative and Functional Primate Anatomy.

460-1 to 12 Individual Study in Anthropology. Guided research on anthropological problems. The academic work may be done on campus or in conjunction with approved off-campus (normally field research) activities.

470-3 to 24 People and Cultures. A survey of the prehistory, cultural history, and contemporary cultures of the area in question. Topical emphasis may vary from course to course and year to year. (a) Africa, (b) Asia, (c) Caribbean, (d) Europe, (e) Latin America, (f) Near East and North Africa, (g) North America, (h) Oceania. Prerequisite: a basic acquaintance with geography and history of the areas.

480-3 Senior Seminar. Readings and discussion concerning major issues in the study of humankind, with an emphasis on anthropological writing. Not open to graduate students or non-majors. Fulfills the CoLA Writing-Across-the-Curriculum requirement. Prerequisite: 300a,b,c,d.

490-3 Field Methods and Analysis in Linguistic Anthropology. Includes theoretical background and a project in the linguistic aspects of culture. Prerequisite: 300b, 301.

495-3 to 8 Ethnographic Field School. Apprentice training in the field in ethnographic theory and method. Students will be expected to devote full time to the field school. Prerequisite: consent of the instructor.

496-1 to 8 Field School in Archaeology. Apprentice training in the field in archaeological method and theory. Students will be expected to be in full-time residence at the field school headquarters off campus. Prerequisite: consent of instructor.

499-3 Honors Thesis. Directed reading and field or library research. The student will write a thesis paper based on original research. Not open to graduate students. Prerequisite: consent of department.

Applied Sciences and Arts, College (ASA)

The College of Applied Sciences and Arts offers the following technically-related courses. These courses serve as common requirements for various majors. Select courses are available to students enrolled in other academic units.

100-3 Introduction to Applied Sciences and Arts. Designed to introduce prospective clientele to careers in technical fields and in specific to the College of Applied Sciences and Arts with a focus on career decision making, selective admission procedures, course and licensure requirements, and career placement and mobility.

102-2 Technical Writing. To successfully complete this course, the student should be proficient in particular writing techniques (technical description, definition, classification, abstracting, etc.) and follow through a library or field research project in their individual technical fields. Lecture and individualized instruction. Prerequisite: English 101.

126-4 Technical Physics. Introduces the basic laws and principles of physics with emphasis on technical applications and problem-solving. Includes topics in mechanics, structure of matter, thermodynamics and electricity. Lecture-discussion four hours per week. Prerequisite: 125 or equivalent.

199-1 to 10 Individual Study. Provides first-year students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program supervisor, and division chair.

299-1 to 16 Individual Study. Provides students with opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program supervisor, and division chair is required.

319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. This course may be classified as independent study. Prerequisite: consent of instructor.

Architectural Studies (ARC)

111-5 Introduction to Architectural Drawing. Basic principles in the geometry of architectural drawings to include orthographic projection and pictorial drawing. Lecture: three hours. Laboratory: four hours. Prerequisite: major in architectural studies or consent of instructor.

112-3 Architectural Graphics. Materials, methods and techniques in architectural graphics through sketching and drawing in various black and white media, theory and use of color, and delineation in various color media. Lecture: one hour. Laboratory: five hours. Prerequisite: major in architectural studies or consent of instructor.

113-3 Architectural History. The study of the influences and development of architectural from prehistoric through the contemporary period. In particular, the study of structure, aesthetics, and language of architecture. Lecture: three hours. Prerequisite: major in architectural studies or consent of department chair.

115-4 Introduction to Design. This course introduces the student to the basic principles and elements of design by means of practical and abstract applications. Development of two and three dimensional solutions to conceptual design problems. Instruction through presentation and critique in a design studio setting. Lecture: two hours. Laboratory: six hours. Prerequisite: 111, 112 and major in architectural studies or consent of instructor.

118-3 Computer Applications in Architecture. This course serves as an introduction to various electronics media employed within the practice of architecture. Creative and effective skills in the use of computers in architectural applications is consistently stressed. Lecture: three hours. Prerequisite: major in architectural studies or consent of instructor.

124-5 Architectural Drawings I. Introduction to basic materials and components used in contemporary construction. A survey of manufacturing methods, available sizes, performance characteristics, quality, finishes and applications. Usage of vendor's brochures and standard references. Preparation of working drawings in light wood frame construction to practice current procedures, dimensioning, notation and design correlation, with standard and creative detailing. Lecture: three hours. Laboratory: four hours. Prerequisite: 111, 118 and major in architectural studies or consent of instructor.

125-4 Architectural Design I. Problem solving in architectural design with emphasis on design elements and principles, human scale, methods and procedures, composition, and presentation. Architectural projects of relatively small scope and simple nature. Lecture: one hour. Laboratory: five hours. Prerequisite: 113, 115, 118 and major in architectural studies or consent of instructor.

199-1 to 10 Individual Study. Provides first-year students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor and department chair.

214-5 Architectural Drawings II. Continuing study of materials and practices in document preparation for non-complex buildings using masonry and reinforced concrete construction. Investigation and use of local, state, and federal codes regulating health and safety. Construction techniques relating to criteria of permanence, low maintenance and budget requirements. Working drawings for two-level, light commercial/industrial buildings. Lecture: three hours. Laboratory: four hours. Prerequisite: 124 and major in architectural studies or consent of instructor.

215-4 Architectural Design II. Continuing study of architectural design with application of principles and procedures for projects of increased scope and complexity, with attention to research, site planning, and comprehensive feasibility. Presentations in various media. Lecture: one hour. Laboratory: five hours. Prerequisite: 125 and major in architectural studies or consent of instructor.

216-4 Architectural Structures I. Elementary study of forces and force systems using graphic and analytic methods. Basic structural concepts: reactions, shear and moment diagrams, axial, eccentric and combined loading on beams and columns. Review of principles used in the design of floor and roof structural systems: load analysis, acting and resisting stresses. Analytic and graphic truss stress analysis. Lecture: four hours. Pre-

requisite: Mathematics 140, Applied Sciences and Arts 126 and major in architectural studies or consent of instructor.

217-2 Architectural Systems. Basic principles of mechanical and electrical equipment of buildings. Familiarization with water supply and sanitation systems. Fundamentals of properties of heat, air conditioning, and purification systems. Fundamentals of illumination and electrical systems. Fundamentals of acoustics and materials for reflection, attenuation, and isolation. Lecture: two hours. Prerequisite: Information Management Systems 125, Applied Sciences and Arts 126 and major in architectural studies or consent of department chair.

219-2 Architectural Site Planning. Fundamentals of topography, site planning, building location, preparation of detailed site drawing, introduction to use of surveying equipment. Lecture: two hours. Prerequisite: 124 and major in architectural studies or consent of instructor.

220-2 Architectural Specifications. Function of specifications as a contract document. The relationship of specifications to architectural drawings, organization and format. Content of various sections of the specifications document. Lecture: two hours. Prerequisite: 214 and major in architectural studies or consent of instructor.

223-3 Architectural History II. This course covers the development of modern architecture and urban planning from the nineteenth century to the present. This will include the development of American, British and Continental architecture and urban planning, including the influence of Japanese architecture and design. Lecture: three hours. Prerequisite: 113 and major in architectural studies or consent of instructor.

226-4 Architectural Structures II. Continued study of structural framing systems. Investigation of materials and design of structures through selection of the safest and most economical shapes to satisfy the requirements for structural members commonly used in building construction. Formulation and use of structural design procedures, with regard to material limitations and code requirements, and the selection of structural members. Lecture: four hours. Prerequisite: 216 and major in architectural studies or consent of instructor.

229-2 Architectural Estimating. Study of estimating methods including material lists and quantities, material and labor costs, and factors affecting construction costs. Lecture: two hours. Prerequisite: Information Management Systems 125, 214 and major in architectural studies or consent of department chair.

299-1 to 16 Individual Study. Provides students with opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor and department chair.

315-4 Architectural Design III. Correlation of the schematic design and design development phases of the project from the initial program with appropriate drawings required for each phase. Lecture: two hours. Laboratory: four hours. Prerequisite: 215, 223 and major in architectural studies or consent of instructor.

316-3 Architectural Structures III. Continuing study of framing materials and systems for buildings using advanced concepts of structural analysis. Included are earthquake resistant structures, composite beams, plastic theory, statically indeterminate structures, long spans, moment distribution, multi-story structures, etc. Lecture: three hours. Prerequisite: 226, major in architectural studies or consent of instructor.

318-3 Architectural CADD I. Introduction to, and the development of the competencies and skills in the use of computer aided design and drafting in the architectural disciplines. Includes the development of two dimensional drawings using the C.A.D. system. Prerequisite: 111 and consent of department chair.

319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

320-1 to 12 Architectural Cooperative Education. The student will participate in an Architectural Technology approved cooperative education program that includes formal instruction, training and/or career related work experiences. Students receive a salary or wages and engage in pre-arranged assignments related to their academic program and career objectives. Department faculty evaluations, cooperative agency student performance evaluations and student reports are required. Cooperative experience may be in one or more of the following broad areas: (a) schematic design, (b) design development, (c) construction documents, (d) bidding or negotiations, (e) construction administration. Hours and credit to be individually arranged.

324-4 Architectural Drawings III. Correlation of the design development and construction documents phases of a building project. Development of the project from design development through construction drawing phases with appropriate drawings required for each phase. Lecture: two hours. Laboratory: four hours. Prerequisite: 214 and major in architectural studies or consent of instructor.

328-3 Architectural CADD II. Skill development of the computer aided drafting system in the preparation of contract documents in all architectural disciplines and specifically working drawings. Emphasis will be placed upon developing competencies in data and graphics repeatability. Prerequisite: 318 and consent of department chair.

338-3 Architectural CADD III. Skill development in the computer aided design system in the schematic and design development phases of all architectural disciplines. The use of the computer aided design system as a tool for three dimensional creative problem solving. Prerequisite: 328 and consent of department chair.

350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. This course may be classified as independent study. Prerequisite: consent of instructor and department chair.

371-3 Lighting and Acoustical Systems. The study of lighting and acoustics as major tools in designing interior spaces through actual problem solving. Emphasis is on task, ambient and specialty lighting as well as

sound control within and between spaces. Lecture. Prerequisite: Mathematics 140 or University Core Mathematics and Architectural Studies 324 or Interior Design 272 or concurrent enrollment in Interior Design 272.

372-3 Mechanical and Plumbing Systems. Study of interior architectural mechanical equipment as it relates to the proximate environment. Emphasis is on heating, cooling, ventilation, and plumbing systems with attendant building codes. Lecture. Prerequisite: Mathematics 140 or University Core Mathematics and Architectural Studies 324 or Interior Design 272 or concurrent enrollment in Interior Design 272.

415-6 Architectural Design and Construction Documentation. The student will complete schematic design, design development and construction documents for a minimum 2-story building, emphasizing the integration of the basic elements of building, structural and environmental technologies. Lecture: two hours. Laboratory: eight hours. Prerequisite: 226, 315, and 324 and major in architectural studies or consent of instructor.

471-3 Professional Practice. Introduction to the organization, management, and practice of architecture and interior design as a business and profession. Emphasis is placed on the range of services provided, professional ethics, business management, marketing, contracts and negotiations, design cost analysis/control, and other aspects of professional practice. Lecture: three hours.. Not for graduate credit. Prerequisite: 215 or Interior Design 392 or consent of department chair.

Army Military Science (AMS)

101-1 Introduction to Military Science. An examination of the realities of conflict and the U.S. response to conflict. Particular emphasis is on the U.S. Army's role. Includes the history, organization, and mission of the U.S. military and explores the opportunities resulting from the individual's decision to exercise leadership within the military organization.

102-1 or 2 Land Navigation and Traverse. An introduction to land navigation involving the use of the compass, topographic maps, the sun, and prominent stars. Includes terrain traverse techniques such as free climbing and rappelling. Competitive compass exercises will also be presented as well as other outdoor practical exercises. Two credit hours will be given for those who attend the Leadership Laboratory.

103-1 Basic Rifle Marksmanship. A comprehensive study and practical handling of basic firearms. This course incorporates the Illinois Hunter's Safety Course and certification test, and fosters ability to accurately maneuver target acquisition through practical exercises with firearms.

201-3 Basic Leadership Skills. Applied leadership in a small group context. Exercises in self-confidence, group communications, and leadership evolved from situations where the group is required to function and survive on a self-sufficient basis. Principles of survival and cooperative effort will be explored in depth, with maximum involvement of the student in leadership and problem-solving roles. Includes Leadership Laboratory.

202-2 Leadership and Management Techniques. A study of the Military Management System, including the functional aspect of leadership within the military structure. Includes the presentation of military leadership traits, styles, approaches, managerial techniques, and communications.

203-1 to 13 Basic Leadership Camp. A special six-week training program designed to prepare students for the advanced course of ARMY ROTC. The course is conducted at Ft. Knox, Kentucky during the summer. Students are evaluated on their potential to become an Army Officer. Prerequisite: consent of the director of Army military science.

301-4 A Study of Organizational Leadership. A multi-faceted approach to the study of leadership in both a military and civilian setting. Emphasis is placed upon human behavior, communication, the individual as a leader, group dynamics, and the military's interface with society. An extensive block on ethics, morality and the Code of Conduct is also presented. Physical training techniques are taught with practical application. Includes Leadership Laboratory. Prerequisite: consent of the director of Army military science.

302-3 Small Unit Tactics. The student is introduced to small unit tactical operations at the platoon and company level. Offensive, defensive, and retrograde operations are covered in detail. Unit organization and patrolling are also stressed. Practical exercises are conducted in the classroom and in field environments. Physical training is also conducted. Prerequisite: consent of the director of Army military science.

358-6 Advanced Leadership Camp. A special six-week field study training program designed to further prepare Army ROTC advanced course students for the basic tasks that will be required of them as junior officers and leaders in the Army. The course is normally conducted at a major Army installation during the summer. Prerequisite: consent of the director of Army military science.

401-4 Advanced Leadership and Management. An analysis of selected leadership and management problems in the following military subjects: unit administration at company level emphasizing correspondence; fundamental concepts of military justice in the armed forces of the United States, including the procedures by which judicial and nonjudicial disciplinary measures are conducted; U.S. Army readiness program as it deals with unit maintenance; the position of the United States in the contemporary world scene discussed in light of its impact on leadership and management problems of the military service; and a fundamental knowledge of the logistical support available to the unit. Leadership development is continued by the application of leadership principles, stressing responsibilities of the leader, and increasing experience through practical exercises. Includes Leadership Laboratory. Not for graduate credit.

402-3 Fundamentals and Dynamics of the Military Team. This course is designed to give the students a working knowledge in the theory and dynamics of the military team. Generally this includes a study of combat operations by the various military teams, with emphasis on the planning and coordination necessary between the elements of the team. The subjects to be presented during this three-hour block of instruction include an understanding of command and staff organization at the battalion level, military intelligence methods and procedures used to obtain intelligence, and an analysis of the principles used in internal defense and

development, emphasizing tactical operations which include civil affairs. Since this course is presented just prior to the commissioning of the cadets, several hours of instruction are presented near the end of the school year on the obligations and responsibilities of an Army officer. Includes Leadership Laboratory. Not for graduate credit.

403-1 to 3 Independent Study in Military Science. Directed independent study in selected areas. Students may register for one hour per semester or may register for one hour for the first semester and two hours for the second. They may not register for three hours during one semester. Not for graduate credit. Prerequisite: consent of the director of Army military science.

Art and Design (AD)

100A-3 Two-Dimensional Design. A fundamental design class dealing with two-dimensional concepts and materials. Emphasis will be placed on design problems which will develop perceptual skills and critical judgment. Studio fee \$3. Incidental expenses not to exceed \$50.

100B-3 Three-Dimensional Design. A fundamental design class dealing with three-dimensional design concepts and materials. Emphasis will be placed on design problems which will develop perceptual skills and critical judgment. Studio fee \$10. Incidental expenses not to exceed \$30.

101-3 Introduction to Art. (University Core Curriculum) A course in the comparative study of visual art in the history of civilizations. The course, using slide lectures, studio labs taught by graduate assistants, reading in textbooks, and examinations, raises the student's familiarity, and practical knowledge of formal, social and critical issues germane to the visual arts. The course's pedagogical method is inclusive of diverse cultures and traditions by means of comparative and thematic analysis.

110-3 Introduction to Drawing I. Designed to help the student experience the concepts and processes that constitute the language of graphic expression. The goal is a working understanding of the still life. Studio fee \$5. Incidental expenses not to exceed \$50.

120-3 Introduction to Drawing II. Designed to help the student experience the concepts and processes that constitute the language of graphic expression. The goal is a working understanding of inanimate and animate forms in space. Studio fee \$5. Incidental expenses not to exceed \$50. Prerequisite: C or better in 110.

122-3 Drawing for Communication. An introduction to graphic thinking and the visualization of ideas using the materials, tools and techniques employed in design. Students will develop skills and knowledge necessary to effectively think and communicate using pencils, markers and mixed media. Recommended prerequisite: C or better in 110.

200-3 Introduction to Drawing III. Concerned with the introduction to various media, compositional devices, spatial investigation, and the human figure. Studio fee \$30. Incidental expenses not to exceed \$75. Prerequisite: C or better in 120.

201-3 Introduction to Painting. Emphasizing material, techniques, processes, and ideas fundamental to the discipline of painting. Studio fee \$5. Incidental expenses not to exceed \$100. Prerequisite: C or better in 100a, b, 110, 120.

202-3 Introduction to Printmaking. Lectures and films on the basic printmaking processes: relief, intaglio, plano graphic, stencil, and cast paper. Emphasis on studio lab work in relief and intaglio, printmaking processes. Studio fee \$35. Incidental expenses not to exceed \$35. Prerequisite for art majors: C or better in 100a, b, 110, 120.

203-3 Beginning Sculpture. Emphasis experience in materials, techniques, processes, and ideas fundamental to the discipline of sculpture. Studio fee \$35. Incidental expenses not to exceed \$25. Prerequisite: C or better in 100a, b.

204-3 Beginning Ceramics. Introduction to ceramic forming techniques of hand building and throwing on the potter's wheel. Students will explore traditional methods of ceramic form construction and will develop fundamental building skills through dialogue, projects, and problem-solving experiences. Studio fee \$39. Incidental expenses not to exceed \$15. Prerequisite: C or better in 100a, b.

205-3 Beginning Jewelry and Metalsmithing. An introduction to the fundamental skills and technology of jewelry and metalsmithing through practical experience. The properties of the medium will be explored and a survey of the field will be made. Studio fee \$30. Incidental expenses not to exceed \$10. Prerequisite: C or better in 100a, b.

206-3 Beginning Fibers. A studio course providing experience in the material, techniques, processes, and ideas in basic dyed, printed, stitched, and non-loom fibers. Emphasis will be on the expressive use of the two- and three-dimensional qualities of fibers. Studio fee \$50. Incidental expenses not to exceed \$50. Prerequisite: C or better in 100a, b.

207-6 (3,3) Introduction to Art History. Introduction to the scope, methods, and subject matter of art history as a discipline. Emphasis in methodology and problem solving. (a) Covers ancient, medieval, Renaissance and non-European art. (b) Covers Baroque, Rococo, Nineteenth Century and modern art. Prerequisite: C or better in 207a or consent of instructor.

209-3 Innovation for the Contemporary Environment. A variety of factors affecting creative individual and small group problem solving and its relevance to the contemporary environment are explored in theory and in practice. Purchase of book \$4.50.

212-3 Introduction to Type for Visual Communication. An introduction to type and its technical aspects as it applies to design, art and computer-aided design. Emphasis will be on type indication, language, recognition, technique, style and problem-solving using type as a design tool in a variety of different types of design projects. Studio fee: \$20. Prerequisite: C or better in 100a and 100b.

213-1 to 3 (2, 1) Basic Materials and Processes. (A) An introduction to theory and practice of industrial design. Lectures on the fundamental techniques, tools and skills used to manipulate a wide range of materials in the fabrication of industrial design models. Must be taken concurrently with 213b. Prerequisite: C or better in 100a and 100b. (b) A laboratory for learning through demonstration and exercise in basic hand and power tool operation. Emphasis on developing safe work habits and crafting high quality objects. Mechanical drawing and model-making techniques are demonstrated and practiced. Must be taken concurrently with 213a. Laboratory fee: \$10. Prerequisite: C or better in 100a and 100b.

214-3 Introduction to Stained Glass. Practical application of basic techniques of stained glass design and construction to include cartoon making, leading, foiling, pattern cutting, and soldering. Studio fee: \$45. Prerequisite: 100a, 100b, 107, 110, and 120 or consent of instructor.

219-2 to 18 Workshop. Workshop experience in specific studio and academic disciplines: (a) drawing, (b) painting, (c) watercolor, (d) printmaking, (e) sculpture, (f) ceramics, (g) glass, (h) fibers, (i) metals, (j) art education, (k) art history, (l) papermaking. Studio fee \$3 to \$50, depending on course discipline. Each topic restricted to two hours per section.

222-3 Type as Image. An introduction to skills, techniques and design as it relates to typography. The skills and techniques include sketching and drawing letterforms, and preparing typographic, rough, and comprehensive layouts, as well as type specification. A general knowledge of type categories and visual techniques used to complement and enhance typographic messages is emphasized. Studio fee: \$20. Prerequisite: C or better in 100a and 100b.

223-3 Rendering and Graphics. An introduction to the techniques and materials used by industrial designers to two-dimensionally represent three-dimensional conceptual ideas. Students develop skills in drawing and rendering with pencils, markers, pastels, and airbrush. Emphasis is placed on understanding the significance of color and graphic applications for industrial design. Prerequisite: 213a,b.

227-3 History of African American Art. (University Core Curriculum) A history of African American visual arts, with a brief examination of the arts of various nations of Africa and how they affected art in America. Craft arts, architecture, painting and sculpture will be considered from the slave trade era to the Civil War era; the Harlem Renaissance and other 20th Century movements to the present day.

232-3 Graphic Reproduction. An introduction to the tools, skills, techniques and methods used by designers to insure proper preparation of image and text for reproduction. The course covers fundamentals of the printing production process; including mechanical preparation, sizing and scaling, paper and color specification, and the integration of typography into the process. Studio fee: \$20. Prerequisite: 100a, 100b and 222 with a grade of C or better.

237-3 Meaning in the Visual Arts. Designed to provide students with a broad understanding of the history and meaning of art and its relevance to contemporary culture. Emphasis is placed upon interdisciplinary concerns, the environment and contemporary social issues. More detailed in historical content than 227 and is an approved substitution for 101.

242-3 Introduction to Computer Graphics. Introduction to the use of the computer in the production of graphic images. Topics include the definition of two- and three-dimensional data, the generation of engineering and perspective images and animation.

247-3 History of Latin American Art. (University Core Curriculum) Latin American Arts from the Spanish Conquest to the present will be examined, including painting, sculpture, architecture, fibers, ceramics and metals. A few weeks will be spent on Pre-Columbian art. Considers the cultural exchanges between North America and Mexico, Central and South America.

249-3 Two- and Three-Dimensional Presentation. An introduction to the basic knowledge, skills, methods and materials utilized by the practicing designer to effectively present and communicate visually and verbally a design concept in two- and three-dimensional form. Development of traditional skills and knowledge. Emphasis on exposure to computer technology necessary to effectively plan, develop, and fabricate boards, models, and mockups in order to present concepts according to professional design standards. Prerequisite: C or better in 213 or 222.

253-3 Human Factors. An introduction to basic human-machine concepts specifically oriented to design students. Subjects include sensory and motor processes, space and arrangement, and environmental factors in design.

257-1 to 30 Work Experience. Credit for concurrent or non-structured work performed which is related to the student's educational objective. Credit to be granted by department evaluation. Mandatory Pass/Fail.

258-1 to 30 Work Experience. Credit for past work performed which is related to the student's educational objective. Credit to be granted by departmental evaluation. No grade for past work experience.

263-3 Materials and Methods. Exploration of methods, tools, and materials for developmental prototyping. Prerequisite: C or better in 213.

300-9 (3, 3, 3) Intermediate Drawing. Intermediate figure drawing, a studio orientation to drawing the figure. Included in the course are: materials and methods pertinent to drawing the figure; an historical perspective regarding the figure in art; and problems relative to human figuration in drawing. Studio fee: \$50. Incidental expenses not to exceed \$50 for each section. Prerequisite: C or better in 200.

301-9 (3,3,3) Intermediate Painting. (a) Oil painting emphasizing the figure. Studio fee: \$50. Prerequisite: C or better in 201. (b) aqueous medium emphasized. Studio fee: \$5. Prerequisite: C or better in 201. (c) beginning individual problem solving. Studio fee: \$5. Prerequisite: C or better in 301a,b. Incidental expenses not to exceed \$100 for each section.

302A-3 Beginning Etching. Introduction to the basic processes of intaglio printmaking, including etching, aquatint, engraving, and drypoint. Emphasis will be placed on black and white printing. Studio fee \$40. Incidental expenses not to exceed \$50.

302B-3 Beginning Lithography. Introduction to the history and basic processes of lithography, including use of stone and plate. Emphasis will be on black and white printing. Studio fee \$40. Incidental expenses not to exceed \$45.

302C-3 Beginning Silkscreen. Introduction to the basic processes and history of silkscreen; including construction of screen and hand and photographic stencil-making techniques. Studio fee \$45. Incidental expenses not to exceed \$45.

303-9 (3,3,3) Intermediate Sculpture. A studio orientation to tools, techniques, materials, and problems involved in historical and contemporary sculpture. Metal fabrication, figure, wood and stone carving, and plaster fabrication will be emphasized. Studio fee: contingent upon type of materials used by student. Incidental expenses not to exceed \$50. Prerequisite: C or better in 203.

304-6 (3,3) Intermediate Ceramics. (a) Focuses on structured problems designed to encourage the student to apply basic forming skills experienced at the introductory level. Pottery shapes requiring singular and multiple form components will be investigated and simple glazing techniques will be introduced. **(b)** Stresses studio problems of a group nature and introduces glaze calculation as both theory and a practical tool. Personal and creative interpretation of assignments; some problems requiring group effort. Must be taken in a, b sequence. Studio fee: \$50. Incidental expenses not to exceed \$10 for each section. Prerequisite: C or better in 204.

305-6 (3,3) Intermediate Metalsmithing. (a) Exploration of various processes emphasizing the diversity of the technical possibilities within the discipline of metalsmithing. **(b)** Emphasis placed on the use of these processes to develop individual styles. Studio fee \$30. Incidental expenses not to exceed \$25 for each section. Prerequisite: C or better in 205.

306-6 (3,3) Intermediate Fibers. (a) Introduction to weaving; simple and floor looms; work in spinning, dyeing, stitching, printing, and non-loom fibers is encouraged. Studio fee: \$50. **(b)** Continued work in weaving and dyeing with emphasis on double weave, sculptural fibers, and warp and weft ikat. Emphasis on personal expression, craftsmanship, and imagery. Studio fee \$50. Prerequisite: 206 with a grade of C or better.

308-3 Theories and Philosophies of Art Education. Students develop an understanding of the major art issues in art education through examining theories and philosophies of art education. Areas of focus include trends in art education, child development in art, perceptual and psychological development, learning theory, and teaching methods. Requirements include extensive reading and preparation of a major paper. Partially satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for art majors.

309-1 to 12 Independent Study. To be used by majors in the School of Art and Design to pursue independent research activities. Prerequisite: completion of all foundation courses, 3.0 grade point average, major in the School of Art and Design, and consent of instructor.

310I-3 Mythology in Art. (University Core Curriculum) Through multicultural examination of myth as manifested in the visual arts, in selected cultures from prehistoric to modern times. Both European and Tribal cultures will be examined. This course will explore the principal literary sources from myth as they relate to the visual tradition, with special attention to the representations; the relationships between preliterate oral traditions and visual traditions; the influence of visual mythmaking on the literary tradition.

313-3 Computer-Aided Industrial Design. A computer laboratory course focused on learning and utilizing two- and three-dimensional data, drawing and modeling software and applications in the industrial design process. Includes: programming theory, 3-D modeling, design for manufacturing assembly and disassembly, product planning, graphics, detailing, assembly drawings, and bill of materials. Prerequisite: C or better in 263. To be taken concurrently with 333.

314-3 Intermediate Glass. A course designed to introduce the student to alternative forming techniques using glass as an artistic medium. Class assignments will develop projects that will explore the use of fusing, slumping and casting, and their roles in helping to create two- and three-dimensional artistic expressions in glass. Prerequisite: 214 or consent of instructor.

318-2 Curriculum Development in Art Education. Prepares students to organize art resources, materials, and concepts into effective art learning experiences. The focus is on integrating art concepts from art history, aesthetics, criticism, etc., with studio methods and techniques. Requirements include extensive reading, the preparation of a position paper on teaching art, and developing a curriculum document. Partially satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for art majors.

319-3 Art Studio for Non-Majors. General studio for the non-art major. Studio fee \$15 to \$40. Incidental expenses will be at least \$10 per semester.

322-3 Publication Design. Introduction to real-world visual communication issues, needs and problems in the designing and sequencing of pages and publications requiring the configuring of text and image for multiple reproductions. Students are involved with exploration, experimentation and use of traditional and computer methods and technologies in the development of designed solutions for publication. Studio fee \$10. Prerequisite: C or better in 222, 232, 249.

323-3 Product Design Analysis. An introduction to product evaluation techniques, such as human engineering, consumer safety, environmental impact, design liability, and patent protection. Prerequisite: C or better in 253.

327-3 Esthetics. General survey of historical and contemporary philosophies of the beautiful with particular emphasis upon their relation to visual works of art and individual student research leading to the organization and presentation of a personal esthetic concept. Prerequisite: 207b or consent of instructor.

328A-2 Art Education Methods: Elementary. Lecture and studio. Prepares students to teach children the fundamentals of art production. Areas of focus include teaching strategies and methods, art processes and techniques, and the appropriate use of tools and materials. Studio fee \$10. Incidental expenses not to exceed \$15.

328B-1 Internship Laboratory. Observation and pre-teaching experiences in educational settings.

332-3 Computer Graphics. Advanced-level computer graphics in two-dimensional design and an introduction to three-dimensional design and animation. Oriented toward solving practical design problems using computers and graphical software. Prerequisite: 242 or consent of instructor.

333-3 Advanced Technology in Industrial Design. An examination of the technological concepts and innovations required by state-of-the-art automation, robotics, electronic media and smart appliances. Principles of measurement, electronics, mechanics, fluids, microprocessors, systems integration and human interfaces are examined through hands-on investigation and evaluation of products of the past and present with discussions of the future. Prerequisite: C or better in 263.

337-3 History of Industrial Design. Introduction to the history of industrial design, surveying significant trends and examining the variety of forces, social, economic and political, that have shaped its forms and characterized its human role. Prerequisite: 207a,b.

338A-2 Art Education Methods: Secondary. Lecture and studio. Prepares students to teach adolescents the fundamentals of art production. Areas of focus include teaching strategies and methods, art processes and techniques, and the appropriate use of tools and materials. Studio fee \$10. Incidental expenses not to exceed \$15.

338B-1 Internship Laboratory. Observation and pre-teaching experiences in educational settings.

339-3 Survey of Design. An examination of designing throughout the ages emphasizing the role of visual forms of public communication; such as, advertising, promotions, packaging publication, exhibition and informational graphics. A review of artifacts, systems, designers, process, materials and methodologies in relation to technological, scientific and cultural movements of the past and present. Implications for the future are included. Prerequisite: 207a,b.

347-3 Survey of 20th Century Art. A survey of the major developments in painting, sculpture, architecture, and other selected areas of the visual arts from the beginning of the 20th Century to the present. These developments are examined in relation to other significant cultural, scientific, and philosophical events of the 20th Century. Prerequisite: 207b or consent of instructor.

348-3 Studio Art for Elementary Teachers. Lecture and studio for non-art majors. Especially applicable to pre-school and K-6 grades. Introduction to uses and applications of art media, approaches to teaching and artistic awareness, concept development, creative expression, appreciation, art judgment, and knowledge of our art heritage. Studio fee \$10. Incidental expenses not to exceed \$15.

357-3 19th Century Art. Survey of painting, sculpture, and architecture in Europe from the French Revolution to the end of the century. Includes such major stylistic movements as Neoclassicism, Romanticism, Realism, Impressionism, Post-Impressionism, and the roots of modern art. Prerequisite: 207b or consent of instructor.

363-3 Product Development. Investigation and identification of significant product related human need areas. Application of development methodologies in selected product design projects. Studio fee: \$10. Prerequisite: C or better in 323 and to be taken concurrently with 383.

372-3 Promotion and Data Design. Students, with faculty, identify issues, needs and problems in the areas of promotions and quantitative and comparative data design. Students use the design process in conjunction with traditional materials and computer technology to develop viable visual communication solutions. They learn to conduct research and to use critical and creative thinking to develop an imaginative, appropriate, functional solution. Students also further develop their evaluation and assessment skills. Prerequisite: C or better in 322.

383-3 Practicum in Product Design. Advanced comprehensive product design projects developed into production prototypes. Prerequisite: C or better in 323 and to be taken concurrently with 363.

388-1 to 36 Study Abroad. Provides credit toward the undergraduate degree for study at an accredited foreign institution or approved overseas program. Final determination of credit is made on the student's completion of work. Prerequisite: one year of residence at this university, good academic standing, and prior approval of the department.

400-3 to 30 (6,6,3, 3 to 15) Advanced Drawing I. (a) Figure drawing. Not for graduate credit. Prerequisite: 9 hours of 300 with a grade of C or better. **(b)** Individual research. Not for graduate credit. Prerequisite: C or better in 400a. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: C or better in 400b. **(d)** Independent study in drawing. Prerequisite: for undergraduates, C or better in 400b; for graduates, consent of major adviser. Studio fee: for a and b, \$70; for d, \$5. Incidental expenses may exceed \$100 for each section.

401-3 to 30 (6,6,3, 3 to 15) Advanced Painting I. (a) and (b) Individual problem solving with emphasis on technical and conceptual synthesis. Not for graduate credit. Prerequisite: for a, 301a, b, c with a grade of C or better; for b, 401a with a grade of C or better. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: C or better in 401b. **(d)** Independent study in painting. Prerequisite: for undergraduates, C or better in 401b; for graduates, consent of major adviser. Studio fee for a, b, and d, \$5. Incidental expenses may exceed \$100 for each section.

402-3 to 30 (6,6,3, 3 to 15) Advanced Printmaking I. (a) Advanced techniques in printmaking to include intense work in color printing. Not for graduate credit. Prerequisite: C or better in 302-6 hours. **(b)** Individual research with emphasis on history, processes, and ideas which lead to the formation of personal content. Not for graduate credit. Prerequisite: C or better in 402a. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: C or better in 402b. **(d)** Independent study in printmaking. Prerequisite: for undergraduates, C or better in 402b; for graduates, consent of major adviser. Studio fee: for a and b, \$60; for d, \$10 per credit hour enrolled. Incidental expenses may exceed \$50 for each section.

403-3 to 30 (6,6,3, 3 to 15) Advanced Sculpture I. (a) Foundry techniques and direct metal fabrication. Not for graduate credit. Studio fee: \$48. Prerequisite: C or better in 303-6 hours. **(b)** Individual research with emphasis on history, materials, processes, and ideas that form personal content. Not for graduate credit. Studio fee: \$48. Prerequisite: C or better in 403a. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: C or

better in 403b. **(d)** Independent study in sculpture. Studio fee: contingent upon type of materials used by the student. Prerequisite: for undergraduates, C or better in 403b; for graduates, consent of major adviser. Incidental expenses may exceed \$75 for each section.

404-3 to 27 (3,6,3, 3 to 15) Advanced Ceramics I. **(a)** Assigned individual problems with emphasis on ceramic form and glazing. Not for graduate credit. Prerequisite: C or better in 304-6 hours. **(b)** Individual research with emphasis on kiln theory and design. Not for graduate credit. Prerequisite: C or better in 404a. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: C or better in 404b. **(d)** Independent study in ceramics. Prerequisite: for undergraduates, C or better in 404b; for graduates, consent of major adviser. Studio fee: for a, b, and d, \$27 per credit hour enrolled. Incidental expenses may exceed \$20 for each section.

405-3 to 27 (3,6,3, 3 to 15) Advanced Metalsmithing. **(a)** Emphasis will be placed on advanced processes to develop individual expression. Not for graduate credit. Studio fee: \$30. Prerequisite: C or better in 305a, b. **(b)** Media exploration to develop individual styles. Not for graduate credit. Studio fee: \$60. Prerequisite: C or better in 405a. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: C or better in 405b. **(d)** Independent study in metalsmithing. Studio fee: \$10 per credit hour enrolled. Prerequisite: for undergraduates, C or better in 405b; for graduates, consent of major adviser. Incidental expenses may exceed \$75 for each section.

406-3 to 27 (3,6,3, 3 to 15) Advanced Fibers I. **(a)** Individual design problems. Not for graduate credit. Studio fee: \$50. Prerequisite: C or better in 306b. **(b)** Individual research with emphasis on the intensive use of fibers as a creative medium. Not for graduate credit. Studio fee: \$100. Prerequisite: C or better in 406a. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: C or better in 406b. **(d)** Independent study in fibers. Studio fee: \$17 per credit hour enrolled. Prerequisite: for undergraduates, C or better in 406b; for graduates, consent of major adviser. Incidental expenses may exceed \$75 for each section.

407-3 Ancient Art. Ancient art of the Mediterranean area from the Egyptians to the end of the Roman Empire. A survey of the major cultures, with emphasis upon visual analysis, media and techniques, function, and iconography. Field trip required. Documented research paper on an aspect of ancient art required for graduate credit. Prerequisite: 207a or consent of instructor.

413-3 Professional Practice in Industrial Design. The study of designer/client relationships, business practices, design office procedures, and professional ethics. Not for graduate credit. Prerequisite: C or better in 363, 383 and senior standing or consent of instructor. Partially satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for design majors.

414-3 to 21 Glass I. A studio course designed for the beginning glass student focusing initially upon basic flat glass and coil working techniques and processes. Coursework includes projects intended to familiarize the student with designing and executing products in stained glass. Student will be introduced to forming techniques in glassblowing. Studio fee \$20 per credit hour enrolled. Prerequisite: consent of instructor.

415-4 A Creative Look at Reclamation Possibilities for Massively Disturbed Land. Presents the possibility that massively disturbed areas can be aesthetic resources if potential inherent in these sites can be recognized and addressed. Seminar/lecture/studio format with selected lectures given by invited speakers. Discussions include recognition of massive land disturbance; reclamation as a concept; environmental art and design; the questions a potential developer or designer of disturbed land should ask and where they might look for expert advice; and group critiques on student studio projects. Studio projects will involve the visualization in two- and three-dimension formats of plans for the reclamation of the students' chosen site with accompanying documentation.

417-3 Medieval Art. Medieval art from the Fourth to the Fifteenth Century in Western Europe. Examination of selected art objects in terms of media and techniques, iconography, function, and cultural milieu. Field trip required. Documented research paper on an aspect of medieval art required for graduate credit. Prerequisite: 207a or consent of the instructor.

422-3 Packaging Design. An introduction to three-dimensional package design, using traditional and computer technologies. Course emphasis is on concept, layout, design and rendering of commercial packaging for products displayed and sold to the consuming public. Students as designers are introduced to real-world packaging and producing portfolio samples that will showcase their conceptual and design skills, expand their design expertise and make themselves more attractive in the job market. Studio fee: \$10. Not for graduate credit. Prerequisite: C or better in 372.

423-3 Research in Product Design. The objective of this studio course is to develop the student's ability to conduct in-depth product design research and to explore new needs and trends relating design to society. Focus is placed on raising the student's level of design skill and knowledge to the professional level. This senior studio places increasing responsibility on the student to think through their preparation and career direction. Prerequisite: C or better in 363 and 383.

427-3 Renaissance Art. An examination of various topics appropriate to a study of Renaissance art, both Northern and Italian, during the Fifteenth and Sixteenth Centuries in Europe. The emphasis is on a range of art history problems and methods of approach. Field trip required. Prerequisite: 207a or consent of instructor.

429-3 Portfolio. An introduction to all of the tricks, traps and topics an interviewer will pursue during the interview process. Prepares graduating seniors for the cold, hard facts of what is going to happen during the job search, after they get hired and when they get fired. Subjects to include: cover letters, resume, preparing a portfolio, interviewing, corporate structure, dress, money, politics, changing jobs, legal rights, sexual harassment, job leads and how to survive when-and-if you do get hired. Not for graduate credit. Prerequisite: senior standing.

437-3 Baroque and Rococo Art. An examination of various topics appropriate to a study of Baroque and Rococo art in Western Europe. Emphasis upon a range of art historical problems and methods of approach. Field trip required. Prerequisite: Art 207a or b or consent of instructor.

443-3 Professional Practice II. This course is a continuation of 413, Professional Practice I. Focus is placed on portfolio preparation, job search, interviewing techniques and preparation of all documentation required for senior degree project. Not for graduate credit. Prerequisite: C or better in 413. Partially satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for design majors.

447-3 Introduction to Museology. A survey of museum and gallery techniques (emphasis upon practical exhibit development) which will involve answering questions concerning contractual agreements, taxes, insurance, packing, shipping, exhibit design and installation, record systems, general handling, public relations, and sale of art works directed toward problems encountered by the artist outside the privacy of the studio. Prerequisite: art major or consent of instructor.

448-3 Art of Tribal Cultures. Covers a broad range of arts of Africa, Native North America, Pre-Columbian America and Oceania, primarily sculpture, textiles, masking and performance, body decoration and textiles, architecture, and ceramics of small-scale village societies.

452-3 Environmental Graphic Design. An introduction to the theory and practice of planning, designing and implementing visual communication in man-made and natural environments. Course involves spatial perception, color, imagery and typography as related to direction, information and decorative systems for the purpose of placemaking and wayfinding. Not for graduate credit. Prerequisite: C or better in 372.

457-3 Women in the Visual Arts. (Same as Women's Studies 427.) Consists of a survey of women's contributions and participation in the visual arts from the middle ages through the Twentieth Century. Through lecture, discussion and research, painting, sculpture, architecture, crafts, film, photography, and other forms of visual art will be covered. Screening fee: \$10.

458-3 African Arts. Covers a broad range of the arts primarily of west and central Africa, as well as north, south, and east Africa. Includes sculpture, masking and performance, body decoration and textiles, and architecture. Shows how arts are used in the daily life of traditional village societies in these areas.

459-1 to 6 Internship. Supervised work experience related to student's academic program and career objectives. Not repeatable for credit. Not for graduate credit. Prerequisite: consent of design area head. Mandatory Pass/Fail.

463-4 Products for Special Populations. Products for special subset groups within greater population norms. May be of cross-cultural and interdisciplinary implementation. Not for graduate credit.

467-3 Critical Issues in Contemporary Art. An examination of the style and meaning of contemporary art in relation to the current political, social, and cultural issues. Will include visual arts, architecture, and communications media. Prerequisite: 207a and b or consent of instructor.

468-3 Pre-Columbian Art. Covers architecture, textiles, pottery, metal, and 2-D arts of Meso-, Central, and South America during the Pre-Columbian era. Also includes hieroglyphic and calendrical systems and some Post-Columbian era arts as well.

472-3 Advertising and Corporate Identification. An introduction to advertising and corporate identity campaigns as they would be executed in a typical advertising agency creative department by art director/writer teams. The student designer will explore creative advertising campaign and corporate-identity projects in both the print and electronic media. Students will be expected to produce portfolio samples using traditional means and computer applications. Samples will showcase students' conceptual and design skills. These skills expand their design expertise and make them more attractive to the job market. Studio fee: \$10. Not for graduate credit. Prerequisite: C or better in 422; senior standing.

477-3 American Art of the Thirties. A socio-political and artistic study of American art during the decade of the Great Depression. Course material will be divided in three parts: (1) a survey of art trends during the Thirties concentrating on traditional art forms such as painting, sculpture, and architecture, (2) an investigation into government-subsidized art programs, and (3) recent governmental and corporate patronage of the arts through such programs as the National Endowment for the Arts. Prerequisite: 207a and b or consent of instructor.

478-3 Topics In American Art. An in-depth examination and discussion of the social, economic, political and cultural changes in American art focusing on such topics as the third millennium, outsider art, folk traditions, and utopian communities, law and the artist, gender, ethnic diversity, art and technology, and other current issues. Prerequisite: 207a,b.

487-6 (3,3) American Art. (a) U.S. Art to 1913. Study of American art from native Indian settlements through Colonial period to 20th Century. Attention to such art forms as painting, sculpture, and architecture, as well as the rich varied Indian folk and craft traditions. **(b)** U.S. Art Since 1876. Study of American art and design from Industrial Revolution to present. Attention to such traditional art forms as painting, sculpture, and architecture, as well as the many facets of modern design. Prerequisite: 207a,b or consent of instructor.

489-3 to 6 (3, 3-6, 3-6, 3) Senior Thesis. The culminating experience for majors. **(a)** Thesis for industrial design. Creative project development individualized by the student with faculty sponsor. **(b)** Art history thesis. A two-semester course designed to provide art history majors with a sustained experience to apply critical art historical methodology to a self-chosen topic. Not for graduate credit. Prerequisite: senior standing. Restricted to majors. Partially satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for art majors. **(c)** Thesis for general design. In-depth design project chosen by the student in consultation with a faculty member. **(d)** Thesis for visual communication. Individual design project chosen by the student in consultation with a faculty member. Not for graduate credit. Prerequisite: senior standing.

497-3 to 6 (3 per topic) Problems in Art History. A close examination of selected categories of works of art from various periods, media, and cultures as illustrative of particular art historical problems. Topics will vary and include **(a)** portraiture, **(b)** landscape and still life, **(c)** narrative, **(d)** other selected topics. Sections **a** through **c** may be taken only once each, section **d** may be repeated as topics vary. Art historical perspectives

to include formal analysis, iconography, art theory, social history, connoisseurship. Prerequisite: 300-level art history course or consent of instructor.

499-1 to 21 Individual Problems. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Designed to adapt to students' individual needs in problem research. Prerequisite: senior standing in the School of Art and Design, a 3.0 average, and consent of instructor.

Automotive Technology (AUT)

120-3 Automotive Electronics. A course of study in the design and theory of DC electrical circuits. Particular emphasis will be placed on the general application of these theories to automotive electrical systems and the proper use of typical electronic and electrical circuit diagnostic equipment.

150-3 to 5 Engine Mechanical Systems. Directed study of automotive internal combustion engine technology. Lectures will emphasize design factors affecting combustion, compression and induction systems, crankshaft and associated bearings, valve trains, lubrication systems and cooling systems. Particular emphasis will be placed on engine inspection and maintenance techniques. Laboratory experience will consist of disassembly of automotive engines, component design study and the inspection and measurement of components.

160-3 to 5 Brake, Steering and Suspension Systems. An introduction to automotive brake system, steering systems and suspension systems. Lectures will describe steering system geometry, brake system component interrelationships and suspension system designs. Special emphasis will be placed on component diagnosis and maintenance procedures. Laboratory experience will provide the opportunity to study the use of specialized tools, computerized wheel balancing machines and computer-based four-wheel alignment equipment.

170-3 to 5 Engine Electrical Systems. Design and operation of automotive storage batteries, starting systems, charging systems and ignition systems. Lectures will emphasize the operational characteristics of these systems and their individual components. Particular emphasis will be placed on battery, starting system, charging system and ignition system diagnosis. Laboratory experience will provide the opportunity to study the use of digital multimeters, automotive ignition system oscilloscopes, specialized starting/charging system test equipment and various electronic diagnostic equipment. Prerequisite: 120, or concurrent enrollment in 120.

180-3 to 5 Drivetrains. A detailed study of automotive manual transmission and transaxle assemblies, drive-shafts, clutch assemblies and four-wheel drive transfer cases, including an introduction to automatic transmission theory and service. Lectures will focus on the basic theory of operation and component design of the automotive drivetrain. Emphasis will be placed on system and component operation and maintenance. Laboratory experience will provide the opportunity to study approved inspection and maintenance procedures.

220-1 to 24 Automotive Cooperative Education. Students will participate in a departmentally approved cooperative education program that includes formal instruction, training and/or career related work experience. Students receive a salary or wages and engage in prearranged assignments related to their academic program and career objectives. Departmental faculty evaluations, cooperating agency students performance evaluations and student reports are required. Hours and credits to be individually arranged. Prerequisite: automotive technology major and consent of department.

258-1 to 30 Automotive Work Experience. A designation for credit granted for past documented automotive work experience related to the student's educational objectives. Credit will be established by departmental evaluation.

259-1 to 60 Automotive Occupational Training. A designation for credit granted for past documented automotive educational experiences related to the student's educational objectives. Credit will be established by departmental evaluation.

275-3 to 5 Diesel Fuel and Electrical Systems. Specialized study of automotive and light truck diesel fuel systems including mechanical and electronic fuel injection. Subject areas include principles of diesel combustion, diesel pump design, diagnosis and engine performance standards. Additional subject areas may include thermal-mechanical and electronically controlled glow plug systems and starting and charging systems. Prerequisite: 120, 150 and 170.

280-3 to 5 Air Conditioning Systems. A study of refrigeration systems, temperature controls and the vacuum and electrical circuits common to automotive air conditioning systems. Emphasis will be placed on the environmental impact of CFC-based refrigerants, CFC recovery and recycling and environmentally safe refrigerant technology. Laboratory experience will provide the opportunity to study the use of air conditioning system diagnostic tools and refrigerant recovery/recycling equipment. Prerequisite: 120, 170.

285-3 to 5 Body and Chassis Electrical Systems. Studies will focus on the theory of operation of body lighting circuits, instrumentation, wiper systems, cruise control systems, power windows, power seats, power door locks and supplemental inflatable restraints (air bags). Particular emphasis will be placed on electrical circuit diagrams and the development of accepted diagnostic techniques. Laboratory experience will provide the opportunity to study the use of electrical system diagnostic tools and techniques. Prerequisite: 120, 170.

290-3 to 5 Antilock Brake and Suspension Systems. Studies will focus on the theory of operation of brake and suspension systems and their diagnosis and maintenance. Includes the study of computerized antilock brake systems (ABS), including wheel speed sensors, hydraulic control valve operation and traction control. Emphasis will be placed on inspection and maintenance procedures. Laboratory experience will develop diagnostic and maintenance techniques using electronic scan tools, digital multimeters and computerized wheel alignment equipment. Prerequisite: 120, 160 and 170.

295-3 to 5 Engine Service Procedures. Course work designed to develop engine mechanical inspection, maintenance and diagnostic techniques. Emphasis will be placed on analysis of engine component failures and di-

agnosis of abnormal engine noises. Laboratory experience will consist of using specialized engine service equipment and diagnostic tools. Prerequisite: 120, 150 and 170.

299-1 to 16 Individual Study. Provides students with opportunity to develop a special program of study to fit a particular need not met by other offerings. Each student will work under the supervision of a sponsoring faculty. Prerequisite: approval of the sponsor and departmental chair.

320-1 to 12 Automotive Cooperative Education. Students will participate in a departmentally approved cooperative education program that includes formal instruction, training and/or career-related work experience. Students receive a salary or wages and engage in pre-arranged assignments related to their academic program and career objectives. Department faculty evaluations, cooperating agency student performance evaluations and student reports are required. Cooperative experiences may be in one of the following areas: Automotive technical service; automotive management; automotive service training. Hours and credit to be individually arranged. Prerequisite: consent of department and employment at an approved work site.

325-4 Automotive Service Operations. This course will provide a study of the basic skills needed to manage an automotive service department. Methods to improve customer satisfaction, increase service market penetration and increase profits will be emphasized. Daily planning of work schedules, traffic flow and the efficient use of facilities will be included. Laboratory experience will include simulated retail service management situations. Prerequisite: English 102.

360-3 to 5 Automotive Transmissions and Transaxles. A detailed study of automatic transmissions and transaxles theory of operation, diagnosis and maintenance. Lecture will focus on the theory of operation and component design of the automotive automatic transmission. Emphasis will be placed on system and component diagnosis. Laboratory experience will consist of using specialized service equipment and diagnostic tools. Prerequisite: 120, 180.

370-3 to 5 Electronic Engine Controls. Specialized study of automotive electronics used for engine ignition, fuel and emission systems control. Lectures will focus on the operational characteristics of electronic ignition systems, computerized ignition timing control systems and fuel injection systems. Environmental legislation pertaining to automotive emissions will be examined and researched. Particular emphasis will be placed on electronic circuit operation and diagnosis. Laboratory experience will provide the opportunity to use standard electronic diagnostic tools, specialized equipment and computerized diagnostic systems used in emission failure diagnosis. Prerequisite: 120, 150 and 170.

380-3 to 5 Electronic Fuel and Emission Control Systems. Specialized study of automotive fuels, electronic fuel injection systems and emission control systems. Lectures will focus on the operational characteristics of electronic fuel injection systems and emission control systems. Alternative fuels and conventional fuels will be discussed and researched. Particular emphasis will be placed on emission control systems and their effect on failure diagnosis and repair. Laboratory experience will provide the opportunity to study the use of standard electronic diagnostic tools, specialized equipment and computerized diagnostic systems. Prerequisite: 120, 150, 170 and 370.

390-3 to 5 Body and Chassis Electronics. A study of computerized control of body and chassis electrical systems. Areas to be studied include comfort control systems, information display systems, safety/security systems and entertainment systems. Laboratory experience will emphasize the correct use of electronic diagnostic equipment and self-diagnostic software integral to on-board body computers. Prerequisite: 120, 170, 280 and 285.

420-1 to 12 Automotive Service Operations Internship. Each student will be assigned to a University approved work site to engage in work experience related to the Automotive Technology curriculum and the student's career objectives. The student will perform duties and services as assigned by the work site supervisor and internship coordinator. A written assignment is also required as determined by the department. One hundred hours of successfully completed work is required for each semester hour of credit. Not for graduate credit. Prerequisite: senior standing, consent of department, and employment at an approved work site.

430-1 to 8 Technical Investigations in Automotive Technology. Provides opportunities for students to conduct research in such areas as: federally mandated emission and clean air testing; federally mandated vehicle inspection and maintenance procedures; research in conjunction with industry in the area of computer-based diagnostic software debugging; development of computer data related to computer-based diagnostic systems and computer-based technical information databases; development of training information on federally mandated on-board diagnostic systems, phase II (OBDII); investigation of alternative fuel systems. Not for graduate credit. Prerequisite: junior standing, faculty sponsor and consent of department.

435-3 Automotive Retail Operations. This course will provide insight into automotive dealership business management with emphasis on application to daily work. Studies will focus on interpretations of financial statements and on business management techniques essential to successful dealership operations. Not for graduate credit. Prerequisite: 325 and English 102.

475-1 to 8 Special Projects in Automotive Technology. Investigation of contemporary problems and issues within the automotive service field. Example subjects include state and federally mandated vehicle emission laws; safety; required inspection and maintenance procedures; consumer protection legislation - lemon laws; on-board diagnostic systems; hazardous automotive waste materials regulations; automotive retail management systems and procedures. Independent study. Not for graduate credit. Prerequisite: junior standing, faculty sponsor and consent of department.

485-3 Automotive Warranty Administration and Customer Relations. This course investigates the warranty policies of the major automotive manufacturers. Emphasis will be placed on warranty decisions, federal and state laws covering warranties, and the legal aspects of product campaigns. There will be specific concentration on the psychology of customer relations and the development of methods to increase customer satisfaction throughout the warranty process. Not for graduate credit. Prerequisite: junior standing.

Aviation Flight (AF)

200-3 Primary Flight Theory. Prepares the beginning aviation student for the FAA Private Pilot Written Examination. Consists of instruction in aerodynamics, FAA regulations, primary navigation, use of computer, weather, and radio navigation.

201-5 Flight — Primary. Provides flight instruction in preparation for the acquisition of the Private Pilot Certificate. Consists of dual flight instruction, solo and ground instruction in conjunction with each training flight and other flight-related topics.

202-3 Flight — Basic and Intermediate Theory. Instruction in Federal Aviation Administration regulations pertaining to commercial flight operations. Includes advanced instruction in aerodynamics, weather and safe operation of aircraft. Prerequisite: 200.

203-5 Flight — Basic. Beginning course in preparation for the Commercial Certificate. Major emphasis is upon solo and solo cross-country flight, with ground instruction in conjunction with each training flight and other flight related topics. Prerequisite: 201 and a valid Private Pilot Certificate.

204-5 Flight — Intermediate. Continuing preparation for the Commercial Certificate. Including dual, solo and night flight instruction and advanced maneuvers. Ground instruction is provided in conjunction with each training flight. Prerequisite: 203.

205-3 Flight — Instrument Theory. Course is directed to the theory of flight by instrument. Includes classroom instruction in Federal Aviation Administration regulations pertaining to instrument flight, navigation by radio aids, aviation weather, and function, use, and limitations of instruments required for instrument flight. Prerequisite: 202.

206-2 Flight — Instrument. This course continues preparation for the Commercial Certificate. Includes instrument flight instruction. Prerequisite: 203, 204.

207a-2 Flight Advanced. This course completes the requirements for the Commercial Certificate. Includes dual and solo flight maneuvers. Prerequisite: 206.

207b-2 Flight Multi-Engine Operations. Prepares the student for the FAA Multi-Engine rating (airplane). Includes multi-engine flight instruction and individual ground instruction. Prerequisite: 207a.

210-4 Human Factors for Aviators. Provide the student specialized instruction in the areas of: Physiological Aspects of Aviation, Psychological Aspects of Aviation, Aeronautical Decision Making and Crew Resource Management. Prerequisite: 202.

260-4 Reciprocation and Jet Airplane Systems. Students will have knowledge of construction, operation, and components of reciprocating and jet powerplants. They will understand the operation and components of cabin pressurization and air conditioning systems, flight control systems, landing gear systems, fuel systems, electrical systems, anti-icing systems, and fire detection systems.

300-2 Flight-Instructor (Airplane). Prepares the commercial pilot for an FAA Flight Instructor Certificate. Includes 20 hours of dual flight training and 40 hours of specialized ground instruction. Prerequisite: 206.

301-1 Flight-Instructor (Airplane-Multi-Engine). This course consists of five hours of dual flight instruction and 10 hours of classroom instruction. Prepares the holder of flight instructor certificate for the addition of the multi-engine flight instructor rating. Prerequisite: 300.

302-1 Flight-Instructor (Airplane Instrument). Designed to prepare the flight instructor to teach instrument flying, and to acquire the Instrumental Flight Rating. Course consists of ten hours of dual flight instruction and 15 hours of classroom instruction. Prerequisite: 300.

303-3 Flight Instructor Ground School. This course is designed to aid the student who is obtaining a flight instructor's rating. It will cover principles to teaching as well as practical aspects of teaching flight maneuvers necessary for instruction. Prerequisite: 205.

304-2 Practicum in Air Carrier Operations. Students gain practical experience and training by participating as flight officers on passenger aircraft flights. Enables students to practice, under close supervision, the role of first officer within a passenger carrier format. Course includes 20 hours of flight time and a minimum of 40 hours pre- and post-flight activities and instruction. Mandatory Pass/Fail. Prerequisite: 206, 207 and consent of department.

Aviation Maintenance Technology (AMT)

110-4 Aircraft Structure-Fabrication and Repair. Students will be able to identify and select materials employed in aircraft construction. Using appropriate FAR's, they will demonstrate competence in repair of honeycomb, fiberglass, welded, wood, or fabric aircraft members. The student will inspect aircraft members for defects and, if necessary, inspect completed repairs for airworthy condition.

111-4 Materials Processing. Students will be able to identify, select, and inspect aircraft hardware and materials. They will be able to select and apply appropriate cleaning materials and to implement corrosion controls. They will become proficient in the use of precision measurement equipment and related inspection tools.

112-4 Aircraft Electricity. Students will have basic knowledge of electricity generation, AC and DC circuitries, and controls. They will be able to solve problems associated with electrical measurement (AC and DC), circuit interpretations and inspection, aircraft electrical load analysis, circuit malfunctions, and circuit or component servicing. They will have as an introduction, a basic knowledge of aircraft electronics.

113-2 Federal Aviation Regulations. Students will be able to select and use FAA technical and legal publications in order to perform the duties of an aircraft technician.

114-2 Aircraft Weight and Balance. Students will fully understand and solve problems of aircraft weight and balance. They will be able to perform weighing, computation of C.G., and establishing of equipment list.

116-3 Aircraft Instruments. Students will have a knowledge of operation, installation, marking, and interpretation of synchro and servo systems, aircraft and powerplant instruments. They will be able to install, adjust, and calibrate these instruments in accordance with FAA and manufacturers' recommendations.

201-2 Applied Science. The student will be able to understand and demonstrate the application of physical laws including pressure, force, motion, mechanical advantage, heat and sound. The student will interpret blueprints and schematic diagrams and be able to perform basic mechanical drawing using drawing instruments to accomplish orthographic projections, sections and dimensioning of working drawings. Hydraulic tubes, hoses and fittings will also be studied. Course material is directed toward aviation oriented subject matter.

203-2 Aircraft Aerodynamics. Students will have a knowledge of flight theory and factors affecting aircraft in flight. They will explain and compare aircraft design features in subsonic, transonic, and supersonic aircraft. They will be able to assemble and rig various aircraft control systems, analyzing and correcting faulty flight characteristics.

204-4 Hydraulics (Aircraft). Students will have a knowledge of fluid theory and applied physics which relates to aircraft hydraulics. They will know the theory of operation, maintenance requirements, and adjustments of various hydraulic components and systems. They will be able to test, inspect, troubleshoot, and service hydraulic systems and overhaul malfunctioning components in accordance with FAA and manufacturers specifications.

205-6 Cabin Environment and Jet Transport Systems. Students will understand the atmospheric variables at different altitudes and the basic equipment required to cope with malfunction in the cabin pressurization and air-conditioning systems. Using the available information, jet transport aircraft and simulated training panels, they will understand the operation of and be able to identify the components of flight control systems, landing gear, fuel, anti-icing, and fire detection systems. They will be able to compare and analyze aircraft systems of current jet transport aircraft and to diagnose and resolve malfunction problems. They will have knowledge of procedures for aircraft ground handling, APU operation, and system servicing.

206-3 Metals Processing. Students will be able to make appropriate sheet metal repairs using correct repair procedures, tools, and materials. They will be required to demonstrate correct use of and interpretation of structural repair diagrams and correct interpretation of charts and tables from AC 43.13-1A pertaining to materials and methods.

210-2 Aircraft Electrical Systems. The successful student should have a knowledge of the operation, repair, inspection, and service of small and large aircraft electrical systems, using schematic diagrams and training panels.

211-5 Reciprocating Powerplant. Students will have a knowledge of construction, operation, and timing mechanisms associated with aircraft reciprocating powerplants. They will be able to disassemble, clean, measure, inspect, and reassemble a powerplant to airworthy condition in accordance with appropriate FAA and manufacturers' regulations.

212-5 Carburetion, Lubrication, and Fuel. Students will be able to demonstrate their competence in identifying fuel and oil system components and carburetors, understanding the operating principles of each. They will be able to inspect, adjust, troubleshoot, and overhaul these components according to manufacturers and federal regulations. They will be able to identify the grades of aviation fuels and lubricants and understand the characteristics and uses of each.

213-5 Ignition Systems. Successful students should have a knowledge of the operation, repair, inspection, and service of reciprocation and jet powerplant ignition systems and reciprocating starting system. They will be able to time, overhaul, and troubleshoot the various components of each system.

214-3 Propellers. Students will have a knowledge of the physical laws and design characteristics governing propeller operation. They will be able to identify components, troubleshoot, and adjust fixed and variable pitch propellers. They will maintain fixed pitch propellers, and the governor system for variable pitch propellers in accordance with FAA and manufacturers' standards.

215-5 Powerplant Testing. Students will have an understanding of the correct procedures and precautions to be observed during engine installation, ground operation, and fuel and oil servicing. They will be required to inspect and troubleshoot reciprocating and jet engines for airworthy condition and interpret engine instrument readings to diagnose engine malfunctions.

216-6 Jet Propulsion Powerplant. Students will be able to apply and understand physics laws related to jet powerplants. They will be able to identify and understand the operation of jet engines and their components. They will be able to perform inspection, maintenance repair, troubleshooting, and adjustments of jet powerplants and accessories. They will be able to analyze engine performance and to interpret operational charts, graphs, and tables.

225-6 Aircraft Inspection. Students will be able to perform a 100-hour and an annual inspection of an aircraft. They will demonstrate knowledge of FAR's by checking appropriate AD's, classifying repairs, and pinpointing specific service problems. They will also complete the required maintenance forms, records, and inspection reports required by federal regulations. They will understand and be able to perform inspection under computerized aircraft maintenance programs.

230-6 Powerplant Inspection. Students will be able to perform periodic inspection of powerplants. They will demonstrate their knowledge of FAR and application of FAA ADs', Service Bulletins, and proper use of inspection equipment. They will use knowledge learned in the powerplant curriculum to perform malfunction analysis of powerplant and related systems. Live equipment is used on a return-to-service basis.

301-3 Helicopter Theory and General Maintenance Practice. The student will have in-depth knowledge of rotary wing aerodynamics, main and tail rotor systems, rotor blades, primary and secondary controls, and general maintenance practices to include inspection and nondestructive testing. Lecture three hours. Prerequisite:

Federal Aviation Administration Airframe and Powerplant Technician license or consent of program coordinator.

302-6 Helicopter General Maintenance Laboratory. The student will perform general maintenance on rotary wing main rotor systems, tail rotor systems, flight and powerplant control systems to include malfunction analysis, tracking, static and dynamic balancing, rigging, and repair. Laboratory six hours. Prerequisite: concurrent enrollment in 301 or consent of program coordinator.

304-3 Helicopter Power Train and Inspection. The student will have in-depth knowledge of the operation, function, and inspection of all rotational components of a rotary wing aircraft to include transmission, gear boxes, drive trains, and drive shafts. Lecture three hours. Prerequisite: 301 or consent of program coordinator.

306-6 Helicopter Power Train Laboratory. The student will perform all functions of overhaul concerned with rotary wing transmissions, gear boxes, and drive trains. The student will demonstrate skill in disassembly, inspection, discrepancy analysis, reassembly, and non-destructive testing. Laboratory six hours. Prerequisite: concurrent enrollment in 304.

405-3 Flight Management Systems. Using industry type computer instruction and flight simulation trainers, the course will develop the knowledge for operation and management of autopilots, auto throttles, inertial reference systems, electronic instrument systems, and flight management computers on advanced technology type aircraft, such as the Boeing 737-400, 747-400, Douglas MD-81 and MD-11. Lecture two hours, laboratory two hours. Prerequisite: 205 or AF 207a,b or consent of instructor.

Aviation Management (AVM)

258-1 to 30 Aviation Work Experience. Credit granted for prior job skills, management-worker relations and supervisory experience while employed in the aviation industry. Credit will be established by departmental evaluation.

259-1 to 60 Aviation Occupational Education Credit. A designation for credit granted for past occupational education experiences related to the student's educational objectives in the aviation field. Credit will be established by departmental evaluation.

298-1 Multicultural Applied Experience. (Multicultural Applied Experience Course) An applied experience, service-oriented credit in American diversity involving a group different from the student who elects the credit. Difference can be manifested by things such as age, gender, ethnicity, nationality, political affiliation, race, or class. The student can sign up for the one credit experience in the same semester he or she fulfills the multicultural requirement for the University Core Curriculum, or the credit can be coordinated with a particular Core Course on American diversity, although neither is a requirement. Students should consult the respective department for course specifications regarding grading, work requirements and supervision. Prerequisite: Approval of the site representative, faculty supervisor and department chair.

319-1 to 15 Aviation Occupational Internship. Each student will be assigned to a departmentally approved work site engaged in activities related to the student's academic program and career objectives. The student will be assigned to an unpaid, internship position and will perform duties and services in an instructional setting as previously arranged with the sponsoring work site supervisor. Prior departmental approval, supervisor evaluations and student reports are required. Internships may be performed in any of the following broad areas: (a) Airline; (b) Airport; (c) Corporate aviation; (d) Fixed base operation; (e) Flight instruction; (f) Air traffic control; (g) Government; (h) Consulting firm; (i) Other, as arranged. Hours and credits to be individually arranged. Mandatory Pass/Fail.

320-1 to 12 Aviation Cooperative Education. Students will participate in a departmentally approved cooperative education program that includes formal instruction, training and/or career related work experience. Students receive a salary or wages and engage in pre-arranged assignments related to their academic program and career objectives. Departmental faculty evaluations, cooperating agency student performance evaluations and student report are required. Cooperative experiences may be in any of the following broad areas: (a) Airlines; (b) Airport; (c) Corporate aviation; (d) Fixed base operations; (e) Flight instruction; (f) Air traffic control; (g) Government; (h) Consulting firm; (i) Other, as arranged. Hours and credits to be individually arranged.

350-1 to 32 Aviation Career Subjects. In-depth competency, skill development and exploration of innovative techniques and procedures used in aviation businesses, government operations related to aviation and other aviation related organizations. Subjects and topics may include present or planned future operations as well as domestic or international enterprises. Study of departmentally approved topics or projects may include workshops, special short courses, seminars, research or independent study. Prerequisite: consent of instructor.

360-3 The Air Traffic Control System, Procedures and Rules. This course introduces student pilots and prospective career air traffic controllers to the history, evolution and operation of the United States Air Traffic Control System. Air traffic control procedures and rules are emphasized with student pilots treated as users of the system and prospective career air traffic controllers treated as future air traffic service providers. Students will be able to apply air traffic control procedures and rules when operating aircraft or as air traffic specialists. Prerequisite: Instrument Flight Certificate or consent of department.

370-3 Airport Planning. To acquaint the student with the basic concepts of airport planning and construction, as well as an investigation of various community characteristics and resources.

371-3 Aviation Industry Regulation. A study of the various regulatory agencies of the industry and their functions.

372-3 Airport Management. A study of the operation of an airport devoted to the phases of lighting, fuel systems, field marking, field buildings, hangars, and surrounding community.

373-3 Airline Management. A study of the administrative aspects of airline operation and management including a detailed study of airline organizational structure.

374-3 General Aviation Operations. A study of general aviation operations including fixed base operations (fuel, sales, flight training, charter, etc.), corporate aviation (business aviation, corporate flight departments, executive air fleets, etc.) and the general aviation aircraft manufacturing industry.

375-3 Legal Aspects of Aviation. The student will develop an awareness of air transportation. The course will emphasize basic law as it relates to contracts, personnel, liabilities, and legal authority of governmental units and agencies. Lecture three hours.

376-3 Aviation Maintenance Management. To familiarize the student with the functions and responsibilities of the aviation maintenance manager. Maintenance management at the fixed base operator, commuter/regional airline, and national air carrier levels will be studied. Aviation maintenance management problems areas will be reviewed using the case study method.

377-3 Aviation Safety Management. This course will survey the various aspects of aviation flight and ground safety management. Weather, air traffic control, mechanical and human factors in aviation safety management will be reviewed. Case studies of individual aviation accidents and incidents will be analyzed.

385-3 Air Transport Labor Relations. The body of legislation of governing labor relations in the private sector of the United States economy consists of two separate and distinct pieces of legislation, the Railway Labor Act, which governs labor relations in the railroad and airline industries; and the National Labor Relations Act governing labor relations in all other industrial sectors. This course focuses on the examinations of air transport labor relations in the context of these key laws. As the student and practitioner of aviation management comes in contact with both Acts through this course, the student learns similarities and differences of each and their resultant impact. Such a review will provide an understanding of underlying public policy goals, while acquiring an appreciation and understanding of the collective bargaining process, administration and procedures of the labor arena. The student will actively apply this knowledge in a mock labor negotiation. Prerequisite: Aviation Management major or consent of department.

386-3 Fiscal Aspects of Aviation Management. An introduction to the fiscal problems encountered in the administration of aviation facilities.

401-3 Current Issues in Aviation Management. A review of current problems affecting the aviation industry with particular emphasis on resource allocation, planning, and internal and external constraints. Not for graduate credit. Prerequisite: a course in economics or marketing, senior standing, consent of instructor.

402-3 Aviation Industry Career Development. Provides an overall description and forecast of the employment possibilities in the aviation industry, as well as specific information regarding how to apply for such employment. Also covered is the preparation of the future aviation professional for the search for employment including such items as personal assessment, resume construction, interviewing skills, writing letters of appreciation, the use of references, networking, employment referral agencies/services and continuing education. Not for graduate credit. Prerequisite: Aviation Management major or consent of department.

460-3 National Airspace System. The evolution, current state, and future of the National Airspace System with emphasis on its current and future impact on the domestic and international aviation industry. Defines the Federal Aviation Administration's role in the operation, maintenance, and planned modernization of Air Traffic Control facilities, airways and navigational aids, landing aids, and airports. The users of the system, their needs, and issues with the system's operation and planned modernization are examined. Not for graduate credit. Prerequisite: 360 or consent of department.

Aviation Technologies (AVT)

199-1 to 10 Individual Study. Provides students with the opportunity to develop a special program of study to fit a particular need not met by other offerings. Enrollment provides access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: instructor and departmental consent.

233-3 Aircraft Communication and Navigation Systems. This course will introduce the student to the theory of operation of transceivers used for communication in aircraft, as well as audio control and intercom systems, navigation receivers, including VOR, ILS and ADF will be discussed. Student will be introduced to basic operational and trouble analysis techniques using test equipment. Lecture two hours, laboratory two hours. Prerequisite: Aviation Maintenance Technology 112 or department consent.

237-3 Aviation Logic Circuits and Pulse Systems. Students will study the operation of logic gates, inverters, shift registers and counters used in aviation pulse-type equipment. The theory and application of Air Traffic Control Radar Beacon Transponders and Distance Measuring Equipment will be covered. Students will be introduced to basic operational and trouble isolation techniques using test equipment. Lecture two hours, laboratory two hours. Prerequisite: Aviation Maintenance Technology 112 or departmental consent.

258-1 to 30 Aviation-Technology Work Experience. Credit granted for prior Aviation Technologies related job skills, work experience, management-worker relations and supervisory experience while employed in the aviation industry. Credit will be established by departmental evaluation.

259-1 to 60 Aviation-Technology Occupational Education Credit. A designation for credit granted for past occupational educational experiences related to the student's educational objectives in Aviation Technologies. Credit will be established by departmental evaluation.

317-3 Introduction to Aviation Electronics. This course provides an introduction to electron devices used in analog and digital electronics equipment. Device operation will be analyzed from a theoretical perspective, and applied to circuits for power supplies, amplifiers, control devices and communication data bussing. Practical application will be stressed in laboratory. Lecture two hours, laboratory two hours. Prerequisite: Aviation Maintenance Technology 112 or departmental consent.

318-3 Aviation Electronics Control Systems. Coursework is based upon theory and application of analog and digital control systems. Topics include transducers, control input devices, instrument panel displays and feedback sensor circuits. Data recording and monitoring systems will also be presented. Lecture two hours, laboratory two hours. Prerequisite: 317 or concurrent enrollment in 317.

319-1 to 15 Aviation-Technology Internship. Each student will be assigned to a departmentally approved work site engaged in activities related to the student's academic program and career objectives. The student will be assigned to an unpaid internship position and will perform duties and services in an instructional setting as previously arranged with the sponsoring work site supervisor. Prior departmental approval, supervisor evaluations and student reports are required. Hours and credits to be individually arranged. Mandatory Pass/Fail. Prerequisite: departmental approval.

320-1 to 12 Aviation Technologies Cooperative Education. Student will participate in a departmentally approved cooperative education program that includes formal instruction, training and/or career related work experience. Students may receive a salary or wages and will engage in pre-arranged work assignments related to their academic program and career objectives. Departmental faculty evaluations, cooperating agency student performance evaluations and student reports are required. Hours and credit to be individually arranged. Prerequisite: departmental approval.

321-2 FCC Regulations. The students will have knowledge of Federal Communications Commission requirements for aircraft station licenses, aeronautical ground stations, and radio telephone operator's privileges and limitations. Lecture two hours. Prerequisite: 233 or departmental consent.

322-3 Aviation Radar System. Introduces the student to applications of airborne radar equipment, including weather detection and tracking. The student will gain an understanding of installation techniques, system performance specifications, operational analysis and troubleshooting. Lecture two hours, laboratory two hours. Prerequisite: 317 and 318.

323-4 Microcomputers for Aviation Professionals. This course is designed to acquaint the student with microcomputer systems and their utilization as it relates to the aviation industry. The student will become familiar with software requirements, software systems, work processing, spreadsheets and data base requirements. Each student will be acquainted with telecommunication systems used in the aviation field. Each student will have the knowledge to evaluate an individual microcomputer system and its software. Lecture four hours.

324-5 Aviation Electronics Flight Line Maintenance. This course presents a introduction to the study of aircraft electronic systems and their components. Students will learn flight line preventive maintenance techniques and will troubleshoot the systems to the faulty line-replaceable-unit (LRU). The student will evaluate system performance as directed by the Federal Aviation Regulations (FARs), as well as equipment manufacturers' specifications. Lecture five hours. Prerequisite: concurrent enrollment in 325.

325-4 Flight Line Maintenance Laboratory. Students will perform selected operational tasks on aircraft systems or simulators, and will perform flight line preventive maintenance tasks and troubleshoot selected aircraft electronic systems. The student will demonstrate the ability to apply ramp-test criteria to selected systems to determine if tested systems meet prescribed standards. Laboratory eight hours. Prerequisite: concurrent enrollment in 324 and departmental consent.

330-3 Advanced Aviation Electronics. This course will enable the student to develop advanced technical skills in aircraft communication, navigation and pulse systems. Applications will include diagnosing and analyzing state-of-the-art equipment and systems from an operational and fault isolation perspective. Coursework will include applications of emerging technologies in aviation electronics. Lecture one hour, laboratory four hours. Prerequisite: 233 and 237, or departmental consent.

350-1 to 32 Technical Subjects in Aviation Technologies. In-depth competency, skill development and exploration of innovative techniques and procedures used in Aviation Technologies. Study of departmentally approved topics or projects may include workshops, short courses, seminars, research or independent study. Prerequisite: consent of instructor.

360-3 Digital Data Bussing and Electronic Flight Instrument System (EFIS) Theory. This course will introduce the student to digital microprocessor concepts and circuits. The student will be introduced to various digital information data bus systems and electronically generated displays. Data bus protocols, controllers, exchange formats and software used in typical aircraft electronics systems will be explored. Cathode-ray tube display formats used in EFIS indicators will be studied. Lecture three hours. Prerequisite: 318, concurrent enrollment in 365.

365-3 Digital Data Bussing and Electronic Flight Instrument System Laboratory. This course has been designed to enable the student to develop technical skills with the topics studied in 360. The student will construct fundamental digital and microprocessor circuits for analysis and will demonstrate the ability to encode and decode information on standard aircraft data busses. The student will evaluate, test and troubleshoot brief software routines for digital information transfer. Laboratory six hours. Prerequisite: concurrent enrollment in 360.

370-5 Reliability, Maintainability and Fault Prediction and Analysis. Students will demonstrate the ability to understand and perform analysis and prediction of the logistical concepts of reliability, maintainability and fault prediction and analysis of products and systems. A conceptual understanding of logic symbols, fault tree analysis and fault criticality as well as logistical management are presented. Lecture five hours. Prerequisite: departmental consent.

410-3 Advanced Composites. Topics include the theory and application of advanced composite materials used in modern aircraft structures and engine components. Students will evaluate structures and implement various methods of repair and maintenance using both cold and heated application methods. Not for graduate credit. Prerequisite: Aviation Maintenance Technology 110 or departmental consent.

416-3 Advanced Propulsion Systems. A study of advanced turbine powerplants and their control systems. Students will demonstrate an understanding of the operation and construction of integrated composite engines and analyze digital control systems. Topics include the interfacing of powerplant controls and monitoring systems, aircraft electronic data bussing and indicating displays. Not for graduate credit. Prerequisite: 317, 318, Aviation Maintenance Technology 216 or departmental consent.

Biology (BIOL)

200A-3 Cell and Molecular Biology, Genetics and Evolution. Basic concepts and principles of biology: chemistry of life; cell structure and function; energetics and biosynthesis; genetics and molecular biology; and evolution. Two lectures and one two-hour laboratory per week. Prerequisite: Chemistry 200, 201 or concurrent enrollment.

200B-3 Organismal and Ecological Biology. Basic concepts and principles of biology: organismal diversity (plants, animals and microorganisms); plant form and function; animal form and function; and ecology. Two lectures and one two-hour laboratory per week. Prerequisite: Chemistry 200, 201 or concurrent enrollment.

210-2 to 6 Biology Field Studies. A trip of from two to six weeks to acquaint students with organisms in various environments or with methods of field study, collection, and preservation. Students will incur costs for food, lodging, and transportation. Prerequisite: consent of instructor.

305-3 Genetics-Classical and Molecular. Principles of genetics including Mendelism; chromosome behavior; genetic mapping; mutation and allelism; replication, transcription and translation; gene function and regulation; polygenic systems; population genetics and evolution; and genetic applications. Prerequisite: 200a,b and Chemistry 200, 201.

306-3 Cell Biology. The basic functions of the cell are considered. The biochemical basis and mechanisms of the cellular processes, the functions of the subcellular structures, and their ramifications will be explored in the context of plant and animal cells. Prerequisite: 200a,b and Chemistry 200, 201.

307-3 Principles of Ecology. Broad principles of ecology on the organismic, the population, the community, and the ecosystem level. Includes environmental factors, adaptations, energy and material balance, succession, and human ecology. Prerequisite: 200a,b and Chemistry 200, 201.

308-3 Organismic Functional Biology. Fundamental principles and biological examples of basic phenomena characteristic of organisms, including transport, integration, and reproductive systems. Detailed attention will be given to various organ systems with an emphasis on function. Prerequisite: 200a,b and Chemistry 200, 201.

309-3 Developmental Biology. Basic principles and processes of embryonic development including contemporary research on molecular, cellular and genetic mechanisms of differentiation and morphogenesis; selected invertebrate and vertebrate animals and plants will be considered. Prerequisite: 200a,b and Chemistry 200, 201.

315-2 History of Biology. The interrelationships between the development of biological knowledge and the history of the human races.

Black American Studies (BAS)

109-3 Introduction to Black America. A survey course designed to expose the student to various aspects of the black experience. Aspects included are history, literature, theology, the arts, etc. The textbook is a collection of essays designed to use especially in this course and is supplemented by guest lecturers and audiovisual materials.

135-3 The Third World: The African Model. A study of the Third World through a focus on Africa as a model; emphasis on the cultural traditions, the impact of the West, and the problems facing Third World nations today.

209-3 Critical Issues in the Black American Experience. Insights into the black American experience. Concepts including race, ethnicity, class, caste, minorities, prejudice, discrimination will be analyzed. Main focus is on exploration of critical socio-economic, political, and cultural themes such as demographic trends; migration and urbanization, political participation and strategies, income and employment, housing, health, education, black family, black religion, law, and justice. Prerequisite: 109 recommended but not required.

215-3 Black American Experience in a Pluralistic Society. (University Core Curriculum) A study and understanding of the evolution of issues of pluralism in contemporary African American society. This course provides an interdisciplinary analysis of ideological and practical problems of racism, integration, class, equity, social institutions as they relate to the Black American experience.

225-3 Social Change in Africa. Examination of the interplay between tradition and modernity in an effort to understand the new Africa. Some of the forces of social change are analyzed. Other topics include African women and the family structure in change and the problems of African development.

230-3 Introduction to Black Sociology. An introductory course which focuses on the concepts of black sociology in order to fill the gaps of traditional sociology pertaining to the black experience. Designed to heighten the student's awareness of the black identity and the sociological phenomena which affect it and acquaints the student with specific sociological problems in the study of Afro-Americans. Prerequisite: 109.

257-1 Black American Studies Choir. Prerequisite: consent of instructor.

311-6 (3,3) Black American History. (Same as History 362.) (a) Black American History to 1865; (b) Black American History since 1865. The role of blacks and contribution in the building of America and the ongoing fight for equality.

314-6 (3,3) History of Africa. (Same as History 387a,b). (a) History of Africa. A study of West African peoples from earliest times to the present; including the era of kingdoms; the role of Islam; African-European rela-

tions; colonialism; and African nationalism. **(b) History of East-Central Africa.** A study of East and Central African peoples from earliest times to the present; including migrations and kingdoms; African-Arab-European relations, colonialism, and African nationalism.

320-3 Leaders of the Black World. A study of black rulers; governmental representatives; activists; and thinkers; both past and present; in Africa; the West Indies; and the United States, with emphasis on the effects of their philosophies on the black world.

330-3 Black American Social Problems. Comparative study of the social problems which afflict black Americans and other minorities and their consequences; including crime and delinquency, mental and emotional disorders, drug addiction, housing conditions, poverty and unemployment, and labor conditions. Prerequisite: consent of instructor.

332-3 Black Americans and the Law. Focuses on the effect of the American legal system upon the Afro-American from slavery to the present; uses theory and knowledge from the law, history and sociology; will explain the historical perspectives of specific laws as well as their effect upon the Afro-American.

333-4 The Black Family. Exploring the myths and realities of the black family from sociological and psychological perspectives through a critical examination of scholarly controversies and research. Prerequisite: junior standing.

336-4 The Black Personality. Examines current areas of interest in the study of the psycho/social characteristics of black Americans. Theoretical and empirical data will be examined. Considers critical issues as cognitive development; self-concept, socialization process and inter-and intra-group relations. Prerequisite: consent of department.

339-3 Black Americans and the Correctional Process. Analysis of selected topics: the prison community and the black inmate; correction education and the black inmate; and the black professional. Prerequisite: 332.

345-3 Law and Civil Liberties. (See Political Science 332.)

350-3 Contemporary Black Drama. Surveys in the works of major and minor writers of contemporary black dramas from *A Raisin in the Sun* to *No Place to Be Somebody*. Explores recent criticism on black theater, and approaches oral and written criticism from the point of view of black aesthetics. Prerequisite: English 201 or consent of department.

355-3 The Black American Novel Since Native Son. The black American novel and its major themes since Richard Wright's *Native Son*. Includes such authors as Baldwin, Petry, Williams, etc. Prerequisite: English 210, English 325, junior standing, or consent of instructor.

357-3 Blacks in the Performing Arts. History of the role of blacks in the performing arts covering dance companies, ballet, folk dance and black dramatists; cinema, in all its forms; radio and television; and music (spirituals, jazz, opera, classics, etc.) Prerequisite: English 325, or consent of department.

360-3 Race and History in the United States. (See History 361.)

399-1 to 5 Independent Study in Black American Studies. Independent study which examines problems and issues not covered in a specific course. Hours and subject matter decided during consultation with a faculty member. Prerequisite: consent of instructor.

430-3 Black Political Socialization. Definitive approach to how people learn about politics focusing on blacks because of their unique experience; i.e., prolonged minority group status. Research oriented, in that, it takes an explanative and predictive approach to produce models of political learning. Not for graduate credit. Prerequisite: 230, junior or senior standing, or consent of department.

465-3 Governments and Politics of Sub-Saharan Africa. (See Political Science 465.)

475-3 Sociological Effects on Black Education. A teacher-oriented course dealing with up-to-date research in black and minority education. The instructor utilizes the findings of current periodicals to present models for understanding and communicating with black children. Not for graduate credit. Prerequisite: Education 303 or consent of department.

490-1 to 3 Cross-Cultural Rehabilitation. (See Rehabilitation 419.) Not for graduate credit.

Business and Administration, College (BUS)

259-1 to 6 Intern-Work Experience. Current practical experience in business or other work directly related to coursework in a College of Business and Administration program and to the student's educational objectives may be used as a basis for granting credit in the college. Credit is given when specific program credit cannot be granted and may only be used for free elective or general elective credit. Credit is sought by petition and must be approved by the dean before registration. Mandatory Pass/Fail. Prerequisite: College of Business and Administration major with at least twelve hours with a 2.5 grade point average.

291-1 to 6 Individual Study. Supervised work that relates to the students' academic program and career objectives. Enrollment provides access to resources of the entire college. Each student will work under the supervision of a sponsoring staff member. May only be used for free or general elective credit. Credit is sought by petition and must be approved by the dean before registration. Prerequisite: College of Business and Administration major (including pre-business) with at least twelve hours and with a 2.5 grade point average.

402-1 Business Career Transitions. This one credit, required course is designed to prepare business students to make a successful transition from the academic community to the business and professional world. Students develop a personal career strategy, learn how to conduct a pro-active job search campaign, and explore the types of challenges they are likely to experience in the work world. The class features alumni and business guest speakers as well as videos, case studies, and discussion seminars. Not for graduate credit.

Business Administration (BA)

410-3 Financial Accounting Concepts. Basic concepts, principles, and techniques used in the generation of accounting data for financial statement preparation and interpretation. Asset, liability, equity valuation and income determination are stressed. Prerequisite: Enrollment in M.B.A. program or consent of department; M.B.A. program computer ability foundation requirement met.

420-3 Production/Operations Management. A survey of the design, operation, and control of systems that produce goods and services. Topics include forecasting, production planning, facility location and layout, inventory management, scheduling and quality control. Prerequisite: enrollment in M.B.A. program or consent of department.

426-3 Managerial Economics. Develops conceptual framework for business decision-making with emphasis on demand, costs, prices, and profits. Prerequisite: enrollment in M.B.A. program or consent of department.

430-3 Business Finance. An introductory course combining both a description of the structure of business financing and an analysis of functional finance from a managerial viewpoint. Prerequisite: enrollment in M.B.A. program or consent of department; 410, Educational Psychology 506, and M.B.A. program computer ability foundation requirement met, or equivalent.

440-3 The Management Process. Analysis of management theories and the administrative process. Specific managerial activities are analyzed and discussed. Functional relationships in administered organizations are explored. Prerequisite: enrollment in M.B.A. program or consent of department.

450-3 Introduction to Marketing Concepts. An overview of the role of marketing within an economic system and of the major marketing activities and decisions within an organization. Emphasis is on developing an understanding of the marketing process. Prerequisite: enrollment in M.B.A. program or consent of department.

451-3 Methods of Quantitative Analysis. (Same as Mathematics 457.)

452-3 Operations Research. A survey of operations research techniques with emphasis on problem formulation, model building, and model solution. Topics include mathematical programming, waiting-line models, simulation, and decision theory. Prerequisite: enrollment in the M.B.A. program or consent of department; 451, Educational Psychology 506, and M.B.A. program computer ability foundation requirement met or equivalent.

470-3 Legal and Social Environment. An overview of the legal, social, and ethical dimensions which influence business with particular attention to the role of law as a control factor of society in the business world. Prerequisite: enrollment in M.B.A. program or consent of department.

Chemistry and Biochemistry (CHEM)

106-3 Chemistry and Society. (University Core Curriculum) Exploration of the many implications that chemistry has upon modern society. Topics include air and water quality, global warming, acid rain, fossil, solar and nuclear fuels, nutrition and drugs. Three lectures per week except that every other week a three-hour lab is substituted for one of the lectures that week.

140-8 (4,4) Chemistry. A two-semester course of general, organic and biological chemistry designed to meet the needs of students of nursing, dental hygiene, physical therapy, other allied health programs, agriculture, forestry, home economics and other majors with comparable requirements. This course does not satisfy prerequisite requirements for other courses offered by the Department of Chemistry and Biochemistry. It is not applicable to a major in chemistry. Chemistry 140a can serve as a preparation for 200 for students without a year of high school chemistry or for those who feel their background is inadequate. Three lectures and one three-hour laboratory per week.

200-3 Introduction to Chemical Principles. A first semester chemistry course for students majoring in scientific, pre-professional, engineering or technological programs. Atomic structure, molecular structure, bonding, solutions, stoichiometry, gases, liquids, solids and kinetics. Three lectures per week. Prerequisite: one year of high school chemistry or Chemistry 140a; completion or concurrent enrollment in Chemistry 201; two years high school algebra or concurrent enrollment in Mathematics 108.

201-1 General Chemistry Laboratory I. Synthesis and exploration of the properties of compounds and elements. One three-hour laboratory per week. Prerequisite: completion of or concurrent enrollment in Chemistry 200. If Chemistry 200 is dropped, the laboratory course must also be dropped.

210-3 General and Inorganic Chemistry. Second semester chemistry for science, engineering and pre-professional majors. Rates of reaction, chemical equilibrium, acid-base equilibria, pH, electrochemistry, transition metals, properties of inorganic compounds, nuclear chemistry and organic chemistry. Three lectures per week. Prerequisite: 200, 201; completion of or concurrent enrollment in 211.

211-1 General Chemistry Laboratory II. Continued synthesis and exploration of properties of compounds and elements. Prerequisite: 200, 201; completion of or concurrent enrollment in 210. If 210 is dropped, 211 must also be dropped.

230-4 Quantitative Analysis. A one-semester course in analytical chemistry that emphasizes quantitative analyses based on wet-chemical methods and modern instrumentation. Topics include statistics, sampling strategy, gravimetry, multiple chemical equilibria, titrimetry, potentiometry, voltammetry, absorbency and fluorescence spectroscopies, gas and liquid chromatographies, and capillary electrophoresis. Two lectures and two laboratories per week. Ability to solve simple algebraic equations and familiarity with logarithms essential. Prerequisite: 210 and 211.

340-3 Organic Chemistry I. Introduction to the chemistry of carbon-based compounds. Intended to introduce students to functional groups; their structure properties and reactivity. Three lectures per week. Prerequisite: 200.

341-2 Organic Chemistry Laboratory I. An introductory lab course based upon a problem-solving approach to organic chemistry. Students will identify and derivative unknowns using modern organic techniques. One one-hour lecture and one four-hour laboratory per week. Prerequisite: 200, 201 and 340 or taken concurrently.

342-3 Organic Chemistry II. A second semester course in organic chemistry emphasizing synthetic and mechanistic aspects of functional groups. Three lectures per week. Prerequisite: 340, concurrent enrollment in 343 recommended.

343-2 Organic Chemistry Laboratory II. A second organic laboratory course based upon a synthetic approach. Students will learn modern synthetic organic chemistry techniques including modern spectroscopic techniques. One one-hour lecture and one four-hour laboratory per week. Prerequisite: 340, 341 and 342 or taken concurrently.

350-3 to 4 Introductory to Biological Chemistry. Survey of basis elements of biochemistry. Three lectures per week for three hours credit. Enrollment for four hours credit includes a laboratory lecture and one three-hour laboratory. The laboratory lecture is offered on alternate weeks with the laboratory session. Prerequisite: 340, 341.

396-1 to 6 (1-2 per semester) Chemical Problems. Chemical investigations under the direction and supervision of a faculty member culminating in a written report. Student may take 1 - 2 hours per semester and a total of 6 hours. Prerequisite: consent of instructor and one semester of chemistry laboratory.

411-3 Intermediate Inorganic Chemistry. Fundamentals of inorganic chemistry, covering bonding and structure, coordination compounds and the chemistry of some familiar and less familiar elements. Three lectures per week. Prerequisite: 456 or 462 or concurrent enrollment.

431-3 Environmental Chemistry. Chemical principles applied to the environment and environmental problems. Chemical kinetics, thermodynamic, and equilibrium concepts as they relate to the atmosphere, water, and soil will be discussed to include current problems of pollutants, pollutant evaluation, and pollutant remediation. Discussion of methods for the chemical analysis of environmental samples will also be included. Prerequisite: 230 and 340.

434-2 or 4 Instrumental Analytical Chemistry. Theory and practice of instrumental measurements, including emission and absorption spectroscopic, electroanalytical, and chromatographic methods, and an introduction to applied electronics. Two lectures and two three-hour laboratories per week for four credits. Enrollment for two credit hours is restricted to graduate students in the Department of Chemistry and Biochemistry who are advised to take instrumental analysis. Prerequisite: one semester of physical chemistry or concurrent enrollment in 461 or 462; 230 or consent of instructor.

439-3 Forensic Chemistry. A one-semester course in forensic methods of analysis offered in conjunction with the Illinois State Police Forensic Science Laboratory. Topics include identification and quantitation by gas chromatography (GC), GC/mass spectrometry (GC/MS) of drugs and arson residues, selected ion monitoring by GC/MS, Fourier-transform infrared spectroscopy (FTIR) and GC/FTIR of drugs, scanning electron microscopy, energy dispersive X-Ray analysis of paints and metals, X-Ray diffraction of inorganics, and UV spectroscopy. One lecture by SIUC faculty and two labs directed by forensic scientists at the Forensic Science Laboratory per week. Those enrolled must submit to background checks due to presence of sensitive materials. Enrollment limited to 3-4 students per class; students with high academic standing considered. Prerequisite: 434 and instructor consent.

444-3 Intermediate Organic Chemistry. A transitional course between introductory and graduate level chemistry. The chemistry of carbon compounds based upon a mechanistic approach will be discussed. Three lectures per week. Prerequisite: 340, 342 or one year of organic chemistry.

451-6 (3,3) Biochemistry. (Same as Microbiology 451.) (a) Chemistry and function of amino acids, proteins, and enzymes; enzyme kinetics; chemistry, function and metabolism of carbohydrates; citric acid cycle; electron transport and oxidative phosphorylation. (b) Chemistry, function and metabolism of lipids; nitrogen metabolism; nucleic acid and protein biosynthesis; metabolic regulation. Three lectures per week. Must be taken in a,b sequence. Prerequisite: one year of organic chemistry.

455-4 Biochemistry Laboratory. Modern biochemical laboratory techniques for isolation, purification, and characterization of constituents of living cells and for investigations of pathways, kinetics, energetics, and regulatory mechanisms related to metabolism and enzymatic activity. One lecture and eight hours of laboratory per week. Prerequisite: 451a and 230 or concurrent enrollment.

456-3 Biophysical Chemistry. A one semester course in biophysical chemistry intended for biochemists and molecular biologists. Emphasis will be on solution thermodynamics, kinetics, and spectroscopy applied to biological systems. Prerequisite: 340 and 342, 451a or concurrent enrollment, Mathematics 141 or 150.

461-3 Quantum Mechanics and Spectroscopy. An introduction to quantum mechanics and spectroscopy. Prerequisite: Mathematics 221 or 305 or concurrent enrollment.

462-3 Classical Physical Chemistry. An introduction to chemical, statistical thermodynamics and kinetics. Prerequisite: Mathematics 150; Mathematics 250 recommended.

466-2 (1,1) Physical Chemistry Laboratory. A two semester laboratory sequence. One three hour laboratory per week per semester. (a) Experiments relating to topics covered in 462. Prerequisite: 462 or 456 or concurrent enrollment. (b) Experiments relating to topics covered in 461. Prerequisite: 461 or concurrent enrollment.

468-3 Application of Symmetry to Chemistry. The concepts of symmetry elements, groups and character tables will be taught. Symmetry will be applied to molecules in order to simplify and characterize their wave functions and vibrational frequencies. Prerequisite: 461 or consent of instructor.

489-1 to 3 Special Topics in Chemistry. Prerequisite: consent of instructor and of chair.

496-1 to 8 Undergraduate Research — Honors. Introduction to independent research under the direction of a faculty member culminating in a written report. Not for graduate credit. Prerequisite: a 3.0 grade point aver-

age, five semesters of chemistry laboratory including one semester of physical chemistry, consent of instructor and department chair.

Chinese (CHIN)

120-8 (4,4) Elementary Chinese. Standard (Mandarin) Chinese. The basic skills of listening, speaking, reading, and writing. No previous knowledge of Chinese required. Must be taken in a,b sequence.

201-8 (4,4) Intermediate Chinese. Standard (Mandarin) Chinese. Development of listening, speaking, reading, and writing on the intermediate level. Must be taken in a,b sequence. Prerequisite: 120b or equivalent.

305-2 to 4 (2,2) Individualized Language Study. Designed to improve language skills beyond the intermediate level. Tailored to the particular needs of students. Prerequisite: 201b or equivalent.

320-8 (4,4) Advanced Chinese. Standard (Mandarin) Chinese. Further development of listening, speaking, reading, and writing skills on the advanced level. Emphasis on developing proficiency in reading modern Chinese through cultural readings. Must be taken in a,b sequence. Prerequisite: 201b or equivalent.

370-3 Contemporary China. A study of customs, habits, beliefs and traditions operating in China today. Taught in English. Prerequisite: Foreign Languages and Literatures 313i or consent of instructor.

390-1 to 6 Independent Study in Chinese. Directed individual study of some question, author, or theme of significance in the field of Chinese literature, language, or culture. Prerequisite: consent of instructor.

410-3 The Linguistic Structure of Chinese. (Same as Linguistics 411.) Phonology and syntax of Mandarin Chinese. Principal phonological features of major Chinese dialects. Special emphasis on the contrastive analysis between Mandarin Chinese and English. Theoretical implications of Chinese syntax for current linguistic theories. Prerequisite: one year of Chinese or Linguistics 401.

435-3 Business Chinese. An overview of China's business through reading in Chinese dealing with the major aspects of China's foreign trade ranging from broad principles and policies to concrete details of operation and procedure. Enhancement of conversational skills for business contexts. Prerequisite: 320 or equivalent.

490-1 to 6 Advanced Independent Study in Chinese. Directed individual study of some question, author, or theme of significance in the field of Chinese literature, language, or culture. Prerequisite: consent of instructor.

Cinema and Photography (CP)

101-3 History and Analysis of Cinema. (University Core Curriculum) An introduction to world cinema. To include film as entertainment, art, personal expression, education and cultural/ideological expression. Modes of film including narrative, documentary, animation and experimental are studied.

220-2 Introduction to Photography. An introduction to the basic technical information and black and white laboratory processes. The emphasis is upon an exploration of the technical process rather than photographic vision. Students will have hands-on experience in the labs. Students will supply their own film and paper. Laboratory fee: \$15.

225-3 Photography for Design Majors. An introduction to the principles of photographic language and techniques specifically tailored to the need of the art and design student. Will cover the basic photographic skills as well as specific techniques of interest to art and design students. Students will supply their own camera, materials and some chemicals. Laboratory fee: \$15.

257-1 to 6 Work Experience. Used to recognize concurrent work experience related to the student's educational objective. One to six hours of credit may be applied toward graduation requirements following departmental evaluation and approval. Mandatory Pass/Fail. Prerequisite: consent of the department.

310-3 History of Still Photography. A survey of the important images, ideas, people, and processes that make up the history of still photography. Covers from 1839 to the mid-twentieth century. Students purchase texts.

311-3 Contemporary Photography. A survey of contemporary photographers, their concepts, and the influences of their work upon culture. Covers from mid-twentieth century to the present. Students may be required to purchase texts. Completion of 310 may be helpful, but is not required.

320-4 Basic Photography. An introduction to black and white still photography; its materials, processes and vision. Designed to give technical knowledge and to explore visual perception. Students must have fully adjustable camera, may purchase texts, and will supply own materials and some chemicals. Laboratory fee: \$15. Prerequisite: Non-majors by consent of department.

322-4 Color Photography. Introduction to color still photography, its materials, processes, and vision. Students purchase materials and may purchase texts. Laboratory fee: \$15. Prerequisite: 320 or equivalent and consent of department.

349-3 The Cinema. The cinema as a communicative and expressive media. Study of film types illustrated by screenings of selected films. Screening fee: \$10.

355-4 Film Production I. Basic techniques for filmmaking. Production of Super 8 motion pictures. Students purchase texts, film stock and processing. Requires access to Super 8 camera and cassette recorder. Non-majors by consent of department. Equipment usage fee: \$10.

356-4 Film Production II. Techniques of 16mm double system sound film production. Production of films by individuals or crews. Students purchase texts, film stock, processing, sound materials and laboratory services. Equipment usage fee: \$50. Prerequisite: 355 and consent of department.

360-3 Film Analysis. The relationships among structure, style and meaning in all types of films. Screening fee: \$10. Students purchase texts.

368-3 Introduction to Cinema Theory. A survey of cinema theories propounded by figures such as Munsterberg, Arnheim, Eisenstein, Bazin, Kracauer, and important modern theorists. The course covers the wide

range of major attempts to derive the essence of cinema. Films that exemplify or raise theoretical issues are screened. Screening fee: \$10. Students purchase texts. Prerequisite: 360.

401-3 Large Format Photography. Introduction to the aesthetics and techniques of large format (sheet film cameras) photography with emphasis on personal expression and commercial/professional applications. Students purchase texts and provide photographic materials and chemicals. \$15 for additional laboratory materials. Prerequisite: 320 and consent of department.

402-3 Sensitometry. An advanced course dealing with the technical and visual applications of the black and white process. Explores the zone system, density parameter system, and practical chemistry. Also deals with the visual application of these systems. Laboratory fee: \$15. Prerequisite: 320 and consent of department.

404-3 Introduction to the Studio. Problems and possibilities in the aesthetics and techniques of studio photography: lighting, visual perception, environment, history, theory. Students purchase texts and provide photographic materials. \$15 laboratory fee. Prerequisite: 320 and consent of department.

405-3 Applied Photography I. Theory and practice of contemporary commercial/industrial photography. Students provide materials and may purchase texts. Laboratory fee: \$15. Prerequisite: 322 and consent of department.

406-3 Applied Photography II. Practice and ideas of advertising/illustrative and editorial photography. Students purchase materials and may purchase props, texts, and equipment. Laboratory fee: \$15. Prerequisite: 405 and consent of department.

407-3 Photography and the Mass Media. Exploration of the use, context, and meaning of photography in the mass media. The photograph as a communications tool will be evaluated along with the role and responsibility of the photojournalist. Students will apply theoretical concepts through group and individual assignments. Students purchase texts and provide photographic materials. \$15 laboratory fee. Prerequisite: 320 and consent of department.

408-3 Documentary Photography: Method, Format, and Distribution. Exploration of the techniques, history, and contemporary context of documentary photography. Audience, publication, and distribution of documentary projects will be addressed. Each student will produce an in-depth documentary photographic project. Students purchase texts and provide photographic materials. \$15 laboratory fee. Prerequisite: 322 and consent of department.

420-3 Experimental Camera Techniques. Experimental approaches to the creation of photographic images in the camera. Students provide materials and may be required to purchase texts. Laboratory fee: \$15. Prerequisite: 322 and consent of department.

421-3 Experimental Darkroom Techniques. Experimental darkroom manipulations of the straight camera image. Students provide materials and may purchase texts. Laboratory fee: \$15. Prerequisite: 322 or consent of department.

422-3 Advanced Color Photography. Advanced study and production of color photographs with emphasis on experimental techniques using Kwik Proof, and other forms of photo-mechanical reproduction. Students provide materials and may purchase texts. Laboratory fee: \$15. Prerequisite: 322 and consent of department.

425-3 to 9 (3,3,3) Studio Workshop. An intensive workshop focusing on current trends in photography. Topics have included landscape photography, architectural photography, environmental portraiture, and imagemaking, among others. Students provide photographic materials and may purchase texts. Laboratory fee: \$15. Prerequisite: 322 and consent of department.

426-3 Non-Silver Photography. Intensive introduction to hand-applied emulsions of cyanotype, Vandyke brownprinting, gum printing, etc. Students purchase materials and may purchase texts. Laboratory fee: \$15. Prerequisite: 322 and consent of department.

449-3 Survey of Film History. Intensive study of major historical periods of the cinema, including technological developments, national cinema movements, sociological and aesthetic determinations, and concerns of film historiography. Prior completion of 349 and 360 is strongly recommended for cinema and photography majors. Screening fee: \$10.

452-3 Film Planning and Scripting. The screenplay as a basis for production. Practice in preparing film plans, treatments, storyboards, and scripts. Examination of the film industry. Prerequisite: 355, junior standing or consent of department.

454-3 Animated Film Production. Practical course for visual expression exploring various animation techniques: developmental, filmographic, rear lit, cut out, line, cel, etc. Students purchase texts, art supplies, film materials, and processing. Equipment usage fee \$10. Prerequisite: 355 and/or consent of department.

455-3 Film Production III. Advanced production by individuals or crews of 16mm sound films from pre-production through shooting. Intensive study of budgeting, production planning, scripting, casting, location and studio shooting techniques, equipment rental, lighting and double system sound filming. Students provide film stock, processing and sound materials. Equipment usage fee \$50. Prerequisite: 356 and consent of department.

456-3 Film-Production IV. Continuation of 455 through post production to a first answer print. Intensive study of editing, sound mixing, laboratory procedures and distribution. Students provide editing and sound materials and are responsible for laboratory costs. Equipment usage fee: \$50. Prerequisite: 455 and consent of department.

462-3 History of the Documentary Film. Study of the development of the non-fiction film with emphasis on the documentary. Screening fee: \$10. Students purchase texts.

463-3 History of the Experimental Film. Study of experimentation in cinema from the turn of the century to contemporary avant-garde films. Student purchase texts. Screening fee: \$10.

466-3 to 6 (3,3) Film Styles and Genres. Intensive study of specific body of films grouped by similarities in style, genre, period and cultural origin. Emphasis of historical, theoretical, and critical issues. Topics vary each

semester. Sample topics: the Western; the French new wave; Third World cinema; Surrealism in film. May be taken two times if topic differs. Screening fee: \$10.

467-3 to 6 (3,3) Film Authors. Intensive study of the work of one or more film authors (directors, screenwriters, etc.). Emphasis is on historical, theoretical, and critical issues. Topics vary each semester. Sample topics: the films of Alfred Hitchcock, the films of Jean Renoir. May be taken two times if topic differs. Screening fee: \$10.

470-3 to 9 (3,3,3) Advanced Topics. An advanced course concentrating on special topics in cinema and photography. (a) Advanced studies in cinema history/theory. Topics offered have been the information film, feminist and ideological criticism of film. (b) Advanced topics in film production. Topics offered include motion picture sound workshop, narrative film workshop. (c) Advanced studies in photography. Topics offered have included publication and presentation, the figure, multi-image, fantasy photography among others. (d) Advanced studies in interdisciplinary topics. Not more than six semester hours may be counted for graduate credit. Screening fee for (a): \$10. Equipment fee for (b): \$50. Laboratory fee for (c): \$15. Prerequisite: consent of department.

471-3 to 6 (3,3) Problems in Creative Production: Photography. Conceptual exercises involving different aspects of photographic production. Emphasis is placed upon individual creative response to assignments. Topics vary; may be repeated for a total of 6 credits. Students provide photographic materials and chemicals and may purchase texts. Prerequisite: 322 and consent of department.

472-3 to 6 (3,3) Problems in Creative Production: Cinema. An intensive examination, through readings, screenings, and filmmaking, of a cinematic genre, style, movement, or technical challenge. Theory is combined with practice, resulting in a group film production. Previous problems studied have been the pseudo-documentary, 35mm filmmaking, and film as performance. Topics may vary; may be repeated for a total of 6 credits. Equipment usage fee: \$50. Prerequisite: consent of department.

491-1 to 9 Individual Study in Cinema or Photography. Research in history, theory or aesthetics. Usually taken 3, 3, 3. Not more than 9 semester hours of 491, 495, and 497 combined may count toward the first 38 hours for the B.A. in cinema and photography. Not for graduate credit. Prerequisite: consent of department.

492-1 to 3 Practicum. Practical experience in the presentation of photographic theory and procedures. Not for graduate credit. Prerequisite: consent of department. Mandatory Pass/Fail.

495-1 to 12 Internship. Credit for internship with professional film or photographic units. Not more than 9 semester hours of 491, 495 and 497 combined may count toward the first 38 hours for the B.A. in cinema and photography. Not for graduate credit. Prerequisite: consent of department. Mandatory Pass/Fail.

497A-1 to 9 Projects in Cinema. Individual or crew projects in motion picture production. Not more than 9 semester hours of 491, 495, and 497 combined may count toward the first 38 hours for the B.A. in cinema and photography. Not for graduate credit. Equipment usage fee: \$50. Prerequisite: consent of department.

497B-1 to 9 Projects in Photography. Individual projects in still photography. Not more than 9 semester hours of 491, 495 and 497 combined may count toward the first 38 hours for the B.A. in cinema and photography. Not for graduate credit. Laboratory fee: \$15. Prerequisite: consent of department.

498-1 Senior Portfolio. Preparation of senior portfolio project. Required of all photography students. To be taken during last year in residence. Mandatory pass/fail. Not for graduate credit.

499A-4 Senior Thesis-Production. Preparation of a film under the supervision of a cinema and photography faculty member. Normally taken during last term in residence, the senior thesis is evaluated by the departmental faculty. The department will retain one copy of all theses. Students interested in producing a film should have completed 355, 356, 368, 452, and nine hours of cinema history courses. Not for graduate credit. Equipment usage fee: \$50. Mandatory Pass/Fail. Prerequisite: consent of department.

499B-4 Senior Thesis-Studies. Preparation of a screenplay, critical or research paper under the supervision of a cinema and photography faculty member. Normally taken during last term in residence, the senior thesis is evaluated by the departmental faculty. The department will retain one copy of all theses. Not for graduate credit. Mandatory Pass/Fail. Prerequisite: consent of department.

Civil Engineering (CE)

Safety glasses, a hand-held scientific calculator, and textbooks are required of all civil engineering students.

101-2 Introduction to Civil Engineering. Introduction to the role of engineers in society. Discussion of the various aspects of the civil engineering profession. Introduced to problem solving and the design process as it relates to engineering. Introduction to statistics. Individual and team design projects. Instruction on how to use computers in engineering, in particular DOS and WINDOWS operating systems, word processing, spreadsheets, equation solvers, using the Internet (e-mail, FTP, telnet, World Wide Web), and the UNIX operating system.

263-3 Basic Surveying. An introductory course designed to introduce the principles, theory and equipment of surveying. Development of survey field practices on the earth's surface and subsurface and related computations. Prerequisite: Engineering 102 and Mathematics 111.

310-3 Introduction to Environmental Engineering. Basic engineering aspects of water, land and air pollution and control. Problems, sources and effects of pollution. Major state and federal regulations relating to environmental issues. Laboratory supply fee \$15. Prerequisite: Chemistry 210 and concurrent enrollment in or completion of 102, 222a and Mathematics 251.

320-3 Soil Mechanics. Physical and mechanical properties of soils, flow through soils, effective stresses, consolidation, shear strength, soil improvement, lateral earth pressures. Prerequisite: 101 or concurrent enrollment, Engineering 222a and 311.

330-3 Civil Engineering Materials. Introduction of cements and aggregates; production and evaluation of concrete structures; mechanical properties of steels and timber; mixing and evaluation of pavement materials; testing of asphalt and masonry. Prerequisite: 101 or concurrent enrollment and Engineering 311.

331-3 Transportation Engineering. Introduction to geometric design, earth work, drainage and traffic. Basic design principles for each area and their application to typical problems. Prerequisite: 330 or equivalent, or concurrent enrollment in 330.

340-3 Structures. Loads. Types of structures. Structural materials. Safety. Analysis of statically determinate beams, trusses, and frames under static loads. Influence lines. Moving loads. Cables. Arches. Space trusses. Deflection of beams, trusses, and frames. Moment distribution for beams. Prerequisite: 101 or concurrent enrollment and Engineering 311.

361-3 Civil Engineering Surveying. Surveying process and theory for Civil Engineering projects, topographic surveys, precise surveys, easements and related computations. Laboratory. Prerequisite: 263.

362-3 Land Surveying. Survey process and theory of land surveying including development of the United States Rectangular System, boundary and retracement surveys, basic survey law, legal descriptions, title search, field monument search and related computations. Laboratory. Prerequisite: 263.

363-3 Control/Construction Surveying. The surveying processes and theory of control surveying, geodesy, global positioning systems, geographic information systems, all types of construction surveying and related computations. Laboratory. Prerequisite: 263.

392-1 to 6 Civil Engineering Cooperative Education. Supervised work experience in industry, government or professional organization. Students work with on-site supervisor and faculty adviser. Reports are required from the student and the employer. Hours do not count toward degree requirements. Mandatory Pass/Fail. Prerequisite: sophomore standing.

410-3 Solid and Hazardous Waste Engineering. Engineering aspects of solid and hazardous waste prevention, treatment, recycling and disposal. Design of recycling programs, solid and hazardous waste treatment and disposal facilities. State and federal regulations. Problems, sources, and effects of solid and hazardous waste. Design projects required. Prerequisite: 310.

411-3 Physical and Chemical Treatment in Environmental Engineering. Physical and chemical treatment as applied to water and wastewater. Topics include coagulation, flocculation, sedimentation, adsorption, ion exchange, reverse osmosis and oxidation in dilute aqueous systems. Design of systems. Laboratory. Prerequisite: 310.

415-3 Wastewater Treatment. A study of the design equations used in physical, chemical, and biological treatment processes and comparison to design by state standards. Basics of bacteria and their metabolic processes in the degradation of organic wastes. Treatment and disposal of sludges produced in wastewater treatment. Advanced waste treatment processes and reuse of wastewater. Prerequisite: 310 and Engineering 313 and 351.

417-1 Water Quality Laboratory. Measurements of water quality parameters performed. Use of modern instrumental techniques demonstrated. Safety glasses are required. Laboratory supply fee \$15. Prerequisite: 310.

419-3 Water Supply and Treatment. Water quality requirements, water sources, water treatment to include coagulation and flocculation, mixing and sedimentation basins, filtration, disinfection processes, and water softening. Consideration of toxic elements in water (sources, problems and treatments). Prerequisite: 310 and Engineering 313.

421-3 Foundation Design. Application of soil mechanics to the design of the foundations of structures; bearing capacity and settlement analysis; design of shallow footings; stability of earth slopes; design of retaining walls, design of pile foundations, coffer dams. Prerequisite: 320.

422-3 Environmental Geotechnology. Geotechnical aspects of land disposal of solid waste and remediation, solute transport in saturated media, diffusion in soil, hydraulic conductivity and its measurement in laboratory and field, soil-water interactions, compaction, construction quality control of liners, flexible membrane liners used in disposal facilities, slope stability/settlement considerations, cap design using the HELP model. Prerequisite: 320.

431-3 Pavement Design. Design of highway and airport systems: subgrades, subbases, and bases; soil stabilization; stresses in pavements; design of flexible and rigid pavements; cost analysis and pavement selection; and pavement evaluation and rehabilitation. Prerequisite: 320 and 330.

440-3 Statically Indeterminate Structures. Analysis of trusses, beams, and frames. Approximate methods. Method of consistent deformations. Three-moment theorem. Slope deflection. Moment distribution. Column analogy. Plastic analysis. Matrix methods. Prerequisite: 340.

441-3 Matrix Methods of Structural Analysis. Flexibility method and stiffness method applied to framed structures. Introduction to finite elements. Prerequisite: 340 and Engineering 222.

442-3 Structural Steel Design. An introduction to structural steel design with emphasis on buildings. Composite design. Plate girders. Rigid frames. Design project and report required. Prerequisite: 340.

444-3 Reinforced Concrete Design. Behavior and strength design of reinforced concrete beams, slabs, compression members, and footings. Prerequisite: 340.

445-3 Reinforced Masonry Design. Materials. Loads. Walls. Columns and pilasters. Beams. Lateral-load resisting elements. Connections and joints. High-rise structures. Environmental features. Quality control. Design project and report required. Prerequisite: 444.

446-3 Prestressed Concrete Design. Fundamental concepts of analysis and design. Materials. Flexure, shear, and torsions. Deflections. Prestress losses. Composite beams. Indeterminate structures. Slabs. Bridges. Prerequisite: 444.

451-3 Introduction to Finite Elements in Engineering Applications. Introduction to finite element techniques and computer methods in finite element applications. Theory and structure of algorithms for one-dimensional and multi-dimensional problems. Introduction to boundary element methods. Applications in solid mechanics, structural analysis, groundwater flow, and heat transfer. Prerequisite: Engineering 351.

461-3 Legal Aspects of Surveying. Topics covered include common and statute law; unwritten rights in land and their relationship to land surveys; survey standards; restoration of lost corners; multiple corners; rules of evidence and rights, duties and liability of the surveyor. Not for graduate credit. Prerequisite: 362.

462-3 Survey Design and Land Development. Subdivision and land development principles, theory, methods and procedures including laws relating to subdivision and land development. Scope will include rural and urban subdivisions, industrial parks and major recreational developments. Laboratory. Not for graduate credit. Prerequisite: 362.

463-3 Field Survey Problems. Perform extensive field projects in the areas of engineering, hydrographic, topographic, land and control surveying utilizing state-of-the-art equipment. To be held at Crab Orchard National Wildlife Refuge. Must be taken concurrently with 464. Enrollment limited to 12 students. Not for graduate credit. Prerequisite: 361 or 362 or 363.

464-3 Field Survey Planning and Computation. Planning, organization, computations and drafting of field survey projects including the needed mapping utilizing calculators, computers, COGO and CAD. This course must be taken concurrently with 463. Enrollment limited to 12 students. Not for graduate credit. Prerequisite: 361 or 362 or 363.

465-3 Photogrammetry. Process and theory of applications of Photogrammetry with respect to engineering and surveying including flight planning, mathematical principles of aerial photographs, ground control methods, control extensions, stereoscopy and parallax, basic instrumentation and remote sensing with related computations. Laboratory. Not for graduate credit. Prerequisite: 263.

471-3 Modeling Ground Water Flow and Pollution. Mathematical and numerical models for the analysis of groundwater flow and the transport of pollution by moving groundwater. Finite difference and finite element methods. Transport by advection and dispersion. Applications to the design of production wells and remediation of polluted areas. Prerequisite: 474 or consent of instructor.

472-3 Intermediate Fluid Mechanics. A detailed derivation of the Navier-Stokes equations is presented. A working knowledge of these equations is obtained by analyzing several potential flows and some simple viscous flows. Next, the Reynolds equations are derived followed by an introduction to turbulence. Contaminant transport is covered by introducing the concepts of diffusion and dispersion. Finally, the foundations of computational fluid dynamics are presented culminating in the numerical solution of several simple viscous flows. Prerequisite: Engineering 313 and Mathematics 305.

473-3 Hydrologic Analysis and Design. Hydrological cycle, Stream-flow analysis, Hydrographs generations, Frequency analysis, Flood routing, Watershed analysis, Urban hydrology, Flood plain analysis. Application of hydrology to the design of small dams, spillways, drainage systems. Prerequisite: Engineering 222, 313.

474-3 Hydraulic Engineering Design. Hydrostatics, flow in pipes, open channels and porous media metering devices. Includes two to three week projects involving identification, modeling, analysis and design of hydraulic engineering systems. Prerequisite: Engineering 313 and 351.

492-1 to 4 Special Problems in Civil Engineering. Selected engineering topics or problems in (a) structural engineering; (b) hydraulic engineering; (c) environmental engineering; (d) applied mechanics; (e) geotechnical engineering; (f) computational mechanics. Four hours maximum credit. Not for graduate credit. Prerequisite: consent of instructor.

495-4 (1, 3.) Civil Engineering Design. (a) Project development skills, feasibility and cost-benefit analysis, engineering ethics and professionalism. Formation of design teams. Selection of a project, preliminary design, task assignments, development of a design proposal. Written and oral presentations of the design proposal. Not for graduate credit. Prerequisite: completion of or concurrent enrollment in 320, 442, 444, 474, and either 410, 411, 415, or 419; Engineering 361. (b) A capstone design experience using a team approach for the preliminary and final design of a civil engineering project. Documentation of all stages of the design project. Written and oral presentation of the final design. Not for graduate credit. Prerequisite: 495a.

Classics (CLAS)

100-2 Greek and Latin in English. Vocabulary building through roots, prefixes, and suffixes. Recommended for students interested in the origin of English words. No knowledge of Greek or Latin is required.

101-3 Scientific Terminology: Greek and Latin Derivatives. Analysis of common vocabulary and of basic scientific terminology into its component prefixes, roots, and suffixes. The course concentrates on methods for recognizing and understanding polysyllabic technical terms. No prerequisite required. No knowledge of Greek or Latin is required.

130-8 (4, 4) Elementary Classical Greek. The object of this course is to give students a firm foundation in the grammar, vocabulary, and syntax of Ancient Greek in order to enable them to progress to the reading of the Greek classics and New Testament. Must be taken in a,b sequence. No previous knowledge of Greek required.

133-8 (4,4) Elementary Latin. The object of this course is to give students a firm foundation in the grammar, vocabulary, and syntax of Latin in order to enable them to progress to the reading of the Latin classics. No previous knowledge of Latin required. Must be taken in a,b sequence.

201-6 (3,3) Intermediate Greek. Reading and interpretation of selected works by authors such as Xenophon, Plato, Homer, and the New Testament writers. Must be taken in a,b sequence. Prerequisite: (a) 130b with a grade of C or better; (b) 201a.

202-6 (3,3) Intermediate Latin. Reading from authors such as Livy, Caesar, and Cicero. Must be taken in a,b sequence. Prerequisite: 133b with a grade of C or better.

225-3 Athletics, Sports, and Games in the Ancient World. The Olympics and other great games of ancient Greece; games and sporting events of ancient Rome; differences between ancient and modern attitudes about sport and sports. No knowledge of Greek or Latin is required.

270-3 Greek Civilization. An introduction to the life and culture of ancient Greece. Greek contributions to western civilization in literature, art, history, and philosophy. No knowledge of Greek or Latin is required.

271-3 Roman Civilization. An introduction to the life and culture of ancient Rome. Rome's function in assimilating, transforming, and passing on the Greek literary and intellectual achievements. Rome's own contributions in the political, social, and cultural spheres. No knowledge of Greek or Latin is required.

310-3 Ancient Art and Archaeology. Survey of the physical remains of ancient civilizations of the Aegean and Mediterranean areas. Special attention to the artistic and architectural achievements of the Greeks and Romans. Occasionally offered overseas. No knowledge of Greek or Latin is required.

320-3 Latin Composition. The object of this course is to understand and appreciate the structure and style of Latin through composition. Prerequisite: 202a and b, each with a grade of C or better.

332-3 Classical Drama. Reading several tragedies and comedies of the Greeks and Romans both with a view to enjoying them as timeless works of art and with a view to understanding how they grew out of the societies of classical Greece and Rome. No knowledge of Greek or Latin is required. This course satisfies the CoLA Writing Across the Curriculum requirement.

380-2 to 4 Greek Prose Authors in Greek. Reading of Greek prose. Selections from the historians (Herodotus, Thucydides), orators (Lysias, Demosthenes, et al.) philosophers (Plato, Aristotle), or epistles of the New Testament. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: 201a and b, each with a grade of C or better.

381-3 Homeric Epic in Greek. Reading and interpretation of selections from the *Iliad* or the *Odyssey*. Homeric grammar and metrics, epic diction, the conventions of oral poetry. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: 201a and b, each with a grade of C or better.

382-3 Greek Drama in Greek. Reading and interpretation of selections from the works of the classical Greek dramatists: Aeschylus, Sophocles, Euripides, and Aristophanes. Stage conventions of the Attic theater. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: 201a and b, each with a grade of C or better.

383-3 Early Greek Lyric in Greek. Reading and interpretation of poets of the Archaic Age such as Alcaeus, Sappho, and Pindar. Socio-political background, dialects, meters. Prerequisite: 201a and b, each with a grade of C or better.

384-3 Roman Philosophy in Latin. Selections from Cicero, Lucretius, and Seneca the Younger. Recommended for students with double majors in philosophy and classics. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: 202a and b, each with a grade of C or better.

385-3 Medieval Latin. Selected readings from Latin authors of the Middle Ages. Prerequisite: 202a and b, each with a grade of C or better.

386-3 Roman Historians in Latin. Selections from Caesar, Sallust, Livy, Tacitus, and Suetonius. Recommended for students with double majors in history and classics. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: 202a and b, each with a grade of C or better.

387-3 Vergil in Latin. Selections from Vergil's major works, the *Aeneid*, *Eclogues*, and *Georgics*. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: 202a and b, each with a grade of C or better.

388-3 Latin as a Research Tool. Intensive study of Latin as basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor.

389-3 Myth, Fable, and Story in Latin. Selections from works such as the *Metamorphoses* of Ovid, the *Fables* of Phaedrus, and *Satyricon* of Petronius. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: 202a and b, each with a grade of C or better.

390-3 Roman Comedy in Latin. Reading and interpretation of selections from play(s) by Plautus and Terence. Prerequisite: 202a and b, each with a grade of C or better.

391-3 Lyric and Satire in Latin. Reading and interpretation of works by poets such as Catullus, Horace, Juvenal, and Persius. Study of either the lyric or satiric genre. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: 202a and b, each with a grade of C or better.

396-3 Honors in Classics. Readings of classical literature, in Greek or Latin or English translation, for junior or senior majors. The course requires preparation of an honors paper or comparable project, and satisfies one of the requirements for graduation with honors in classics. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: 3.75 grade average in classics courses and consent of classics faculty.

401-3 to 6 (3 per topic) Classical Literature in Translation. Reading and analysis of selected Greek and Latin authors, genres and themes. Students taking the course for graduate credit will do a critical study of one aspect. No knowledge of Greek or Latin is required.

415-1 to 9 (1 to 3 per topic) Readings from Greek Authors in Greek. Reading and interpretation of works of Greek literature at an advanced level. Students taking the course for graduate credit will do a critical study of one aspect. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: two semesters of 300-level Greek or consent of instructor.

416-1 to 9 (1 to 3 per topic) Readings from Latin Authors in Latin. Reading and interpretation of works of Latin literature at an advanced level. Students taking the course for graduate credit will do a critical study of one aspect. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: two semesters of 300-level Latin or consent of instructor.

488-3 Advanced Latin as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor. With consent of student's own department, and with a grade of B or A, satisfies graduate program requirements for foreign languages as a research tool. Prerequisite: 388 or one year of Latin or equivalent.

496-2 to 8 Independent Study in Classics. Guided research on problems in classics. The academic work may be done on campus or in conjunction with approved off-campus activities. Not for graduate credit. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: consent of instructor.

Commercial Graphics (CG)

101-3 Fundamentals of Drawing for Commercial Graphics – Design. An introduction to the materials and techniques utilized in graphic design and illustration. The basic elements of art and design will be identified and incorporated in a series of exercises designed to better acquaint students with the concepts, processes, and skills needed by professionals employed in the commercial graphics field.

109-2 Basic Photography for Commercial Graphics – Design. An introduction to the fundamentals of photography directed toward the needs of graphic design. Through a basic understanding of film exposure and development processes, its use as a graphic medium will be attained. By creative studio and laboratory assignments an insight into the possibilities and limitations of the photographic process will be gained. The cost of film, processing, and printing will be borne by the student. Laboratory fee: \$10. Lecture and laboratory.

110a-3 Survey of Graphic Design to the 19th Century. A survey of the influential images, ideas, movements, graphic artists and illustrators that have contributed to the evolution and history of graphic design from pre-historic origins through the 19th century. Lecture.

110b-3 Survey of Graphic Design—20th Century. A survey of the influential images, ideas, movements, graphic artists and illustrators that have contributed to the evolution and history of graphic design in the 20th Century (1900 to present). Lecture.

120-4 Artistic Anatomy and Color Perception I. Students will demonstrate an ability to understand and use pigmental and light ray color theory and practical application. Students will also demonstrate a knowledge of the bones and muscles of the human anatomy by way of examination and further demonstrate their comprehension and talent by way of ability to design, organize and structure through compositional arrangement. Lecture and laboratory. Laboratory fee: \$20. Prerequisite: concurrent enrollment in 122 and 124.

122-4 Technical Drawing for Graphics. Students will demonstrate an ability to understand and utilize the proper point of perspective in illustration and to use the T-square, triangle, and drawing instruments in precisely executing geometric forms, mechanical, and industrial illustration. In addition, students will demonstrate an ability to render objects on scratchboard: the utilization of zipatone patterns and the proper use of the ruling pen to accurately execute ruled business forms. Lecture and laboratory. Prerequisite: concurrent enrollment in 120 and 124.

124-4 Graphic Layout and Typography I. Students will demonstrate an ability to use the basic principles of layout, how to do thumbnails, roughs, and clear accurate comprehensives. They will also demonstrate an understanding of basic lettering styles and techniques with chisel point pencil. They will demonstrate an ability to understand the history and practical uses of typography in advertising. Lecture and laboratory. Concurrent enrollment in 120 and 122.

126-2 Fundamentals of Drawing and Composition. The student will demonstrate awareness of perspective, light and shade, color theory and application, and composition through basic drawing techniques. Non-majors only. Lecture and laboratory.

128-2 Fundamentals of Graphic Processes. The student will be made aware of the various principles and styles of layouts, letter forms and typography and prepare mechanicals to demonstrate a knowledge of the various printing methods. The student must supply all materials used. Lecture and laboratory.

130-4 Artistic Anatomy and Color Perception II. The student will continue to demonstrate knowledge and artistic ability of the human anatomy in the development of advertising, illustration, fashion illustration, and by way of modification the development of the cartoon figure. Lecture and laboratory. Laboratory fee: \$20. Prerequisite: 120, 122 and concurrent enrollment in 132 and 134.

132-4 Airbrush and Photo Retouching. The student will demonstrate development of skills in the operation and techniques of airbrush rendering used for mechanical and illustrative purposes, and in addition, will retouch black and white photographs suitable for reproduction. Lecture and laboratory. Laboratory fee: \$10. Prerequisite: 120 and 122 and concurrent enrollment in 130 and 134.

133-1 Copyfitting. The student will demonstrate an ability through discussion and examination to properly solve copy fitting problems, specify how many lines a given manuscript or ad will set, how deep, how many pages in any given format, and to calculate the number of characters per pica and per line. Lecture. Prerequisite: concurrent enrollment in 134.

134-4 Graphic Layout and Typography II. The students will demonstrate their ability through discussion and examination to identify at least 14 different type faces on sight. In addition, they will demonstrate an ability to prepare clean, accurate, professional, quality work with offset lithography, letterpress, gravure, and silk

screen printing processes. Lecture and laboratory. Prerequisite: 122 and 124 and concurrent enrollment in 130, 132, and 133.

150-2 Computer Applications for Commercial Graphics Design. Introduction to microcomputer-based techniques. Includes a survey of history and current computer generated graphics. The student will become familiar with basic computer operation and keyboard, and develop business graphics visuals in full color to be produced on 35mm film. Programming not required. Incidental expenses will be borne by the student. Laboratory fee: \$10. Prerequisite: 120, 122 and 124 or permission of the instructor.

199-1 to 10 Individual Study. Provides first-year students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor and department chair.

200-1 Artfair Exhibition. Students will receive practical experience in the coordination and development of an art exhibition. They will participate in the development of announcements, mailers, cataloging, scheduling news releases, receiving of entries, security, and returning procedures. They will develop a systems flow chart for the effective and smooth operation of an exhibition including hands-on operation of exhibit construction and location. Laboratory.

210-6 Advertising Graphics. Students will demonstrate their ability in the preparation of professional assignments in lettering, logo, and letterhead design and the development of line art and cartoons for advertising illustration. In addition, students will have their work selected for production on various client-oriented projects. Lecture and laboratory. Laboratory fee: \$20. Prerequisite: 130, 132 and 134 and concurrent enrollment in 224.

215-6 Dimensional Design. Students will demonstrate their ability to research and analyze information to create a precise original concept and to visually render point-of-purchase displays, exhibits, signs, and package designs. Lecture and laboratory. Laboratory fee: \$20. Prerequisite: 210 and 224 and concurrent enrollment in 222.

222-6 Graphic Design and Advertising Illustration. Students will demonstrate their ability to prepare professionally acceptable assignments in poster panels and billboard designs, diecut tent cards, folder designs and multi-unit advertising, and advertising and cover illustration and client oriented projects for promotions and product. Lecture and laboratory. Laboratory fee: \$20. Prerequisite: 210, 224, and concurrent enrollment in 215.

224-6 Publication Graphics. Students will demonstrate their ability to create new and unusual concepts in advertising layout and design, folder design, color keys, marking up copy, and doing complete production art. Contemporary techniques in design and production will be emphasized. Students also have the opportunity to have work selected for production on various client-oriented projects. Lecture and laboratory. Laboratory fee: \$20. Prerequisite: 130, 132, 134, and concurrent enrollment in 210.

230-1 Job Orientation Seminar. Students will demonstrate a knowledge through discussion and examination of the operations of large and small agencies and studios including the various responsibilities of the people employed in them by class discussion and examination. Prospecting for employment, working conditions, prospects for advancement, how much an artist should charge for a piece of art, and the legal responsibilities of the artist-designer to the client-agency will be discussed. Students will conclude this course with the presentation of a portfolio demonstrating their ability to do professional quality work (at least 10 plates) and will have acquired the experience of being interviewed for an artist position. Lecture.

240-3 to 12 Special Study. A student with a special interest in a particular advertising art or graphic design area will do selected projects and research to develop additional professional skill. Requires approval of the program supervisor. Lecture and laboratory.

299-1 to 16 Individual Study. Provides students with opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor and department chair.

310-6 (3,3) Advanced Illustration. Provides the student with the opportunity for advanced studies in methods and techniques used by recognized illustrators in the development of fiction and non-fiction story visualizations. (a) Visual development. To depict the climax or visually stimulating moment of the story through the use of thumbnails, roughs, value studies and to secure models, costumes, props, etc., as may be needed to photograph for rendering studies. Laboratory fee: \$10. (b) Renderings to be in any medium approved by the faculty sponsor. Number of projects to be determined by complexity of each. Student must have access to a 35mm SLR camera and tripod. Laboratory fee: \$10. Prerequisite: 120, 130, and successful completion of graphic design proficiency requirement, or consent of department chair.

312-6 (3,3) Advanced Airbrush/Technical Illustration. Provides the opportunity for advanced studies in methods and techniques used in airbrush and technical illustration. (a) Perspective or isometric projections rendered in ink, overlay films, or airbrush. Laboratory fee: \$15. (b) Airbrush rendering of commercial advertising or products. Students will be required to complete a specific number of projects that lead through the production to a finished commercial rendering, from concept to touch-up, based on the complexity of each as determined by the sponsoring faculty member. Must have own airbrush and portable compressor. Laboratory fee: \$15. Prerequisite: 122, 132, and successful completion of graphic design proficiency requirements, or consent of department chair.

315-3 Advanced Dimensional Design for Commercial Graphics—Design. Provides the opportunity to advance skills, development, and knowledge in the diverse field of dimensional graphics. The student will utilize dimensional design in the conceptualization and creation of (1) advanced dimensional design (package and exhibit design, point of purchase displays, etc.) and/or (2) paper engineering graphic design (pop-up advertisements, dimensional inserts, etc.). The student will be expected to successfully complete several chal-

lenging projects chosen from a field of eight. Laboratory fee: \$20. Prerequisite: 215, 224, and successful completion of the graphic design proficiency examination, or consent of department chair.

319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the preceptor and coordinator. Reports and assignments are required to be completed by the student. Course and credits to be individually arranged. Mandatory Pass/Fail.

320-1 to 12 Commercial Graphics-Design Cooperative Education. Each student will participate in a departmentally approved cooperative education program that includes formal instruction, training, and/or career-related work experience. Students receive a salary or wages and engage in pre-arranged assignments related to their academic program and career objectives. Department faculty evaluations, cooperative agency student performance evaluations and student reports are required. Cooperative experiences may be in one of the following broad areas: (a) Print design; (b) Advertising design; (c) Print pre-press and production; (d) Print operations. Hours and credit to be individually arranged. Prerequisite: 120, 122, 124, 130, 132, 134.

350-1 to 32 Technical Career Subjects. In depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. This course may be classified as independent study. Prerequisite: consent of instructor.

360-3 Advanced Computer Applications. Provides an opportunity for the advanced study of artistic and technical solutions for commercial graphic problems using the computer as a tool. Demystifies computer graphics for artists and designers and helps them use computer graphics in their work. Hands-on computer painting is explored as well as a library of type fonts. An understanding of commercial graphic print tools and color separation are studied and used. Animation and special effects may be created and saved on a disk. Lecture/laboratory. Expenses approximately \$25. No programming required. Prerequisite: 150 and associate degree in commercial graphics and successful completion of graphic design proficiency requirements, or consent of department chair.

Communication Disorders and Sciences (CDS)

100-0 to 1 Speech Clinic: Therapy. For students with speech and hearing deviations who need individual help. Prerequisite: consent of instructor.

104-3 Training the Speaking Voice. For those students who desire to improve their voice and articulation.

105-3 Introduction to Communication Disorders. A general survey course devoted to a discussion of the various problems considered to be speech and hearing disorders with special emphasis on basic etiological classification schemes and their incidence in the current population. Opportunities for directed observation.

300-3 Phonetics. Instruction in the use of phonetic symbols to record the speech sounds of midland American English, with emphasis on ear training, and a description of place and manner of production of these sounds.

301-3 Introduction to Speech-Language and Hearing Science. An introduction to the science of general speech including the history of research in the field and significant experimental trends. Open to all students.

302-3 Voice and Articulation. A general introduction to the phonological development in children on a normative basis. In addition to introducing the student to the classical studies in articulatory development, this course provides a general exposure to the implications of classical phonetic theory, coarticulatory theory and distinctive features theory as a framework for therapy and research. Physio-acoustic parameters of voice quality variables evidenced in verbal communication are also studied. Lectures and demonstrations emphasize basic information necessary to study for the treatment of voice disorders.

303-3 Language Development and Disorders. Presentation of the progressive stages of language development in the areas of syntax and semantics. The student is acquainted with normal developmental processes and introduced to identification and remediation of therapeutics with children from ages three to twelve. Theoretical considerations and terminology related to traditional structural and transformation grammars are introduced as tools for interpreting the acquisition processes.

307-3 Introduction to Organics. An introduction to the organic bases of communication disorders. An emphasis will be placed on the foundations of development and teratological events and influences which result in specific communication disorders, and overview of those disorders, and their implications for the individual. Observations as directed. Prerequisite: 314 or consent of instructor.

314-3 Anatomy and Physiology of the Speech and Hearing Mechanism. Structure and function of the speech and hearing mechanism.

385-3 Computer Technology in Communication and Fine Arts. An introduction to the basic terminology, concepts and techniques being used in the various areas of education and rehabilitation. A foundation course to prepare students for the impact of computer technology in the professional lives of those who work in the occupational settings represented within the college.

408-3 Communicative Disorders: Craniofacial Anomalies. An introduction to the ontology, teratology, and management of cleft palate and various craniofacial syndromes important to majors and non-majors interested in this aspect of communication and its disorders. Associated problems of personal and social adjustments are also examined. Prerequisite: 314 or consent of instructor.

410-3 Multicultural Aspects of Communication Disorders. Students will explore different cultures and communication within these cultures. Emphasis will be placed on the relationship between cultural differences and communication disorders. Review of speech and language disorders in multicultural populations, as well as assessment and intervention strategies for use with this diverse group will be provided. Prerequisite: 302, 303 or consent of instructor.

417-3 Stuttering. Reviews the data and theories that relate to the etiology, onset and development of stuttering.

418-3 Parameters of Voice. Physio-acoustic parameters of voice quality variables evidenced in verbal communication. Lectures and demonstrations emphasize basic information necessary to study for the treatment of voice disorders.

419-3 Communication Problems of the Hearing Impaired. Objectives and techniques for the teaching of lip reading, speech conservation, and auditory training. Prerequisite: 302, 303, and 420 or equivalents and consent of instructor.

420-3 Introduction to Audiological Disorders and Evaluation. Bases of professional field of audiology (orientation, anatomy, and physiology of the auditory system), major disease processes influencing hearing and their manifestations, measurement of hearing loss. Prerequisite: 301 and 314.

428-3 Communication Disorders and the Classroom Teacher. Etiology and therapy of common speech defects. May be taken by all inservice teachers, seniors, and graduate students in education.

431-1 to 6 Speech Physiology. Course focuses on the physiologic parameters of the supraglottal tract, and respiratory and laryngeal systems related to speech production. Discussion and laboratory experiences involve physiological characteristics of normal and disordered speech production, measurement and research procedures, and implications for neuromotor control of speech. Prerequisite: 301 and 314 or consent of instructor.

438-2 Problems of Communication and the Process of Aging. Reviews problems of communication related to the aging process and examines relevant diagnostic and therapeutic techniques. Prerequisite: senior or graduate standing.

450-3 Neuroanatomical Basis of Human Communication. Examination of the central nervous system (brain and spinal cord) as it relates to normal and disordered human communication. Presentation of basic neuroanatomy, common neuropathologies relevant to communication disorders, and strategies in neurogenic problem solving. Prerequisite: 314 or consent of instructor.

460-3 Augmentative and Alternative Communication Systems. An introduction to alternative and augmentative communication systems for non-vocal clients. Discussions include: use of aided and unaided augmentative systems, assessment procedures and training. Prerequisite: 301 or consent of instructor.

485-1 to 9 (1 to 3 per 700 section number) Special Topics in Communication Disorders and Sciences. Topical presentations of current information on special interests of the faculty not otherwise covered in the curriculum. Designed to promote better understanding of recent developments related to disorders of verbal communication. Open to advanced undergraduate and graduate students with consent of instructor.

491-1 to 9 (1 to 3 per semester) Individual Study. Activities involved shall be investigative, creative, or clinical in character. Must be arranged in advance with the instructor, with consent of the chair. Prerequisite: consent of chair.

492-3 Diagnostic Procedures in Communication Disorders. A course devoted to discussion of the role of the speech and hearing clinician as a differential diagnostician. Special emphasis is placed on correlating information obtained from the oral-peripheral examination, articulation and language evaluation, audiometric and case history information in constructing the initial evaluation report. Prerequisite: restricted to consent of instructor.

493-3 Basic Clinical Practice. Current information regarding diagnostic, treatment and documentation procedures in speech-language pathology will be presented through active observation in the clinical environment and classroom instruction. Prerequisite: restricted to consent of instructor.

Computer Science (CS)

102-3 Computers in Society. An introduction to computers, their history, their uses, present and future roles of computer technology in society, and related social issues. Includes a discussion of hardware and software components, and basic use of some application software. Enrollment restricted to non-majors.

200-3 Introduction to FORTRAN Programming. An introduction to computers and programming. Primary emphasis will be given to the design and implementation of algorithms using FORTRAN. Enrollment is restricted to non-majors.

201-3 Computers and Problem Solving. This course is intended to serve as an introduction to computer systems including their hardware and software, and their use in problem solving. An important component of the course will be laboratory experiences based around the use of personal computers, their peripheral hardware and software, and application packages. The course will have three major objectives as follows: computer literacy and competency, the use of application packages, and problem solving with programming. There will be two lecture and two laboratory hours per week. Roughly, equal number of lecture and lab hours will be devoted to achieve the three objectives.

202-3 Introduction to Computer Science. An introduction to computers and programming using a high-level structured language including a discussion of programming constructs and data representation. Primary emphasis will be given to problem solving, algorithm design, and program development. Prerequisite: 201 or Mathematics 108.

210-3 Introduction to C Programming. An introduction to programming in the language C. Primary emphasis will be given to the design and implementation of algorithms using C. Enrollment is restricted to non-majors. Prerequisite: A first course in a high-level programming language or consent of instructor.

212-3 Introduction to Business Computing. An introduction to concepts and features of computing systems with reference to business information processing. Includes an overview of information system concepts with

basic treatment of database, electronic spreadsheet, and word processing application software as they relate to the business environment.

215-3 Discrete Mathematics. (Same as Mathematics 215.) Number systems and computer arithmetic. Sets, logic and truth tables. Boolean algebra with application to computer logic design, functions and relations. Elementary matrix operations and systems of equations. Combinations, permutations and counting techniques. Elementary probability and statistics. Prerequisite: Mathematics 108 or equivalent.

220-3 Programming with Data Structures. A course in advanced programming, data structure and algorithm design with an increased emphasis on structured design techniques and program development. Topics include advanced language features, data abstraction and object-oriented programming, classes and dynamic data, recursion, stacks, queues, linked lists, trees and graphs, sorting and searching. Prerequisite: 202 and 215 each with a grade of C or better.

306-3 Introduction to Systems Programming. An introduction to system software used at the different levels in a computing system. Design and implementation of system software. Introduction to the UNIX operating system. The language C will be taught as a component in the course and used throughout the course. Prerequisite: 320 with a grade of C or better.

311-3 Design and Implementation of Programming Languages. Study of the significant features of existing programming languages such as FORTRAN, Algol, Pascal, Ada, C with particular emphasis on the underlying concepts abstracted from these languages. Includes formal specification of syntax, representation of data objects, implementation of procedure calls, coroutines and concurrency, heap management and static and dynamic scoping. Introduces object oriented programming (such as Smalltalk), symbolic, functional (such as LISP) and logic programming (such as Prolog) languages. Prerequisite: 220 with a grade of C or better.

312-3 COBOL Programming. COBOL and its use in business data processing. Prerequisite: 202.

315-3 Computer Logic and Digital Design. Introduction to switching algebra and its applications. Combinational logic and combinational circuit components. Sequential logic and sequential circuit components. Asynchronous sequential circuits. Prerequisite: 202 and 215 each with a grade of C or better.

320-3 Computer Organization and Architecture. Overview of the basic logic circuits needed in constructing a computer. Fundamental computer operations: machine and assembly language instructions, stacks, procedures and macros. The translation process: assembly, compiling, linking and loading. Input/Output programming. Hardware elements for processing, transferring and storing information. An introduction to advanced architectures. Prerequisite: 220 and 315 each with a grade of C or better.

330-3 File Structures and Databases. Secondary memory devices. Advanced data structures and algorithms for efficient storage and retrieval of information contained in files. Introduction to database management and the relational database model. Local and remote file access, servers and network-related issues. Prerequisite: 220 with a grade of C or better.

355-3 Algorithms. An introductory treatment of the design, analysis, and complexity of algorithms. Explores fundamental techniques, sorting and order statistics, and basic graph algorithms. Introduction to theory of computing. Prerequisite: 220 with a grade of C or better and Mathematics 221.

361-3 Numerical Calculus. (Same as Mathematics 361.) Algorithms for the solution of numerical problems encountered in scientific research work with special emphasis on the use of digital computers. Includes an elementary discussion of error, polynomial interpolation, quadrature, solution of nonlinear equations and linear systems, solution of differential equations. Prerequisite: 202 or equivalent programming proficiency and Mathematics 221 and 250.

399-1 Social, Ethical and Professional Issues in Computer Science. The issues facing the computer professional in society and industry. Social impact of information technology. Ethical responsibilities of the computer professional. Professional organizations: availability, membership, meetings, ethical codes of conduct. Professional communications: written reports on case studies dealing with ethical decision making in information technology; a written report and an oral presentation on a technical research area in computer science. Prerequisite: Senior standing in computer science.

401-3 Computer Architecture. Review of logical circuit design. Hardware description languages. Algorithms for high speed addition, multiplication, and division. Pipelined arithmetic. Implementation and control issues using PLA's and microprogramming control. Cache and main memory design. Input/Output. Introduction to interconnection networks and multiprocessor organization. Prerequisite: 315 with a grade of C or better.

402-3 Theory and Applications of Computer Aided Design. A study of algorithmic techniques which solve high complexity design rules. Graph algorithms and formulations, randomized solutions, techniques from operations research and statistics, computational geometry algorithms and data structures are introduced. The techniques are mainly applied on the physical design/automation problem for integrated circuits and systems. Prerequisite: 315 and 355 each with a grade of C or better.

414-3 Operating Systems. An extended treatment of the components of operating systems including I/O programming, memory management, virtual memory, process management, concurrency, device management and file management. Prerequisite: 306 and 330 each with a grade of C or better.

416-3 Compiler Construction. Introduction to compiler construction. Design of a simple complete compiler, including lexical analysis, syntactical analysis, type checking, and code generation. Prerequisite: 306 and 311 each with a grade of C or better.

420-3 Parallel and Distributed Computing. This course serves as an introduction to the areas of parallel and distributed computing. The major approaches to parallel programming, including shared-memory multiprocessing and message-passing multicomputing, will be covered in some detail. Students will have programming experience in each of paradigms. Architectural considerations, algorithm design, and measures of performance will be covered. In addition, the course will provide an introduction to distributed computing on a network of computers. Parallel and distributed computing will be contrasted. Other approaches to parallelism

including data parallelism (SIMD) and vector processing will be surveyed. Prerequisite: 306 and 355 each with a grade of C or better.

430-3 Database Systems. A comprehensive treatment of database systems, including network, hierarchical, and relational systems. Prerequisite: 330 with a grade of C or better.

435-3 Software Design and Development. An exercise in the analysis, design, implementation, testing, and maintenance of a large modular application system. Team production of a system is the focal point for the course. Topics include the system life cycle, system specification, human interfaces, modular design, improved programming techniques, and program verification and validation. Prerequisite: 306 and 330 each with a grade of C or better.

436-3 Artificial Intelligence I. Search and heuristics, problem reduction. Predicate calculus, automated theorem proving. Knowledge representation. Applications of artificial intelligence. Parallel processing in artificial intelligence. Prerequisite: 311 and 355 each with a grade of C or better.

440-3 Computer Networks. Design and analysis of computer communication networks. Topics to be covered include queuing systems, data transmission, data link protocols, topological design, routing, flow control, security and privacy and network performance evaluation. Prerequisite: 315 and 355 each with a grade of C or better.

447-3 Introduction to Graph Theory. (Same as Mathematics 447.) Introduction to theory of graphs, digraphs, and networks and applications to electrical systems and computer science. Topics include blocks and cut-points, Eulerian graphs, trees, cycle and cocycle spaces, planarity and Kuratowski's Theorem, connectivity and Menger's Theorem, Hamiltonian graphs, colorability and Heawood's Theorem, flows in networks and Ford-Fulkerson Theorem, critical path analysis. Prerequisite: Mathematics 349 or consent of instructor.

449-3 Introduction to Combinatorics. (Same as Mathematics 449.) An introduction to combinatorial mathematics with computing applications. Topics include selections and arrangements, generating functions, recursion, inclusion and exclusion, coding theory, block designs. Prerequisite: Mathematics 349 or consent of instructor.

451-3 Theory of Computing. The fundamental concepts of the theory of computation including finite state acceptors, formal grammars, Turing machines, and recursive functions. The relationship between grammars and machines with emphasis on regular expressions and context-free languages. Prerequisite: 311 and 355 each with a grade of C or better or graduate standing.

455-3 Design and Analysis of Computer Algorithms. An extensive treatment of the design, analysis and complexity of algorithms. Lower bound arguments, divide-and-conquer techniques, greedy algorithms, dynamic programming, graph theoretic algorithms, PRAM algorithms and NP-completeness and approximation algorithms. Prerequisite: 355 each with a grade of C or better or graduate standing.

464-6 (3,3) Numerical Analysis. (Same as Mathematics 475.) An introduction to the theory and practice of computation with digital computers. Topics include the solution of nonlinear equations, interpolation and approximation, solution of systems of linear equations, numerical integration, solution of ordinary differential equations, computation of eigenvalues and eigenvectors, and solution of partial differential equations. Prerequisite: (a) 202 or equivalent programming proficiency and Mathematics 221 and 250 (b) 464a and Mathematics 305.

470-3 Computer Simulation Techniques. Applications and rationale. Design and analysis of discrete simulation models. Generation of random sequences and stochastic variates. Simulation languages. Prerequisite: 202 and Mathematics 380.

471-3 Introduction to Optimization Techniques. (Same as Mathematics 471.) Nature of optimization problems. General and special purpose methods of optimization, such as linear programming, classical optimization, separable programming, integer programming, and dynamic programming. Prerequisite: 202 and Mathematics 221 and 250.

472-3 Linear Programming. (Same as Mathematics 472.) Nature and purpose of the linear programming model. Development of the simplex method. Application of the model to various problems. Duality theory. Transportation. Assignment problem. Postoptimality analysis. Prerequisite: 202 and Mathematics 221.

484-3 User Interface Design and Development. Human-computer interaction and the importance of good interface design. Interface quality and methods of evaluation. Interface design examples and case studies. Prototyping and implementation techniques. Task analysis and the iterative design cycle. Dialogue techniques, basic computer graphics, I/O device, color and sound. Use of at least one interface toolkit and development methodology to complete an interface design project. Prerequisite: 306 with a grade of C or better.

485-3 Computer Graphics. Study of the devices and techniques for the use of computers in generating graphical displays. Includes display devices, display processing, transformation systems, interactive graphics, 3-dimensional graphics, graphics system design and configuration, low and high level graphics languages, and applications. Prerequisite: 306 with a grade of C or better; Mathematics 150 and 221 are recommended.

490-1 to 6 (1 to 3 per semester) Readings. Supervised readings in selected subjects. Prerequisite: consent of instructor and department.

491-1 to 4 Special Topics. Selected advanced topics from the various fields of computer science. Prerequisite: consent of instructor.

492-1 to 6 (1 to 3 per semester) Special Problems. Individual projects involving independent work. Prerequisite: consent of department.

493-1 to 4 Seminar. Supervised study. Preparation and presentation of reports. Prerequisite: consent of instructor.

Construction Technology (CST)

100-1 Construction Orientation. The student will be given an overview of the construction industry and the various job opportunities available. Guest speakers and field trips are included.

102-4 Construction Drawing and Blueprint Reading. Students will learn to read architectural drawings, to sketch shop drawings and construction details, and to mechanically draw typical plans often included in a set of house plans. Lecture/laboratory six hours. Materials fee, \$3.

103-4 Concrete Technology. The student will obtain knowledge of concrete, its physical and mechanical properties, and the design and control of concrete mixes. In addition, forming systems and the use of concrete as a building material in residential and light commercial construction will be demonstrated. Materials fee, \$3.

104-4 Surveying in Construction. The student will perform basic surveying operations necessary for the location, lay-out and construction of a building. Interpretation of plat books, site plans, and topographic maps is included. A major portion of the course will be spent in field work. Lecture/laboratory six hours. Material fee, \$2.

105-2 Construction Codes, Specifications, Inspection and Safety. This course is designed to make the students aware of safety practices on the job site, OSHA standards and accident prevention. Also, knowledge of building codes, architect and government specifications and building inspection procedures as commonly found in residential and light commercial construction will be discussed. Lecture two hours.

110-5 Residential Framing and Exterior Finish. Students will acquire the basic skills necessary to layout and build a wood frame home. Emphasis is placed on proper layout, fabrication, and erection techniques for floor, wall, and roof frame systems. Lecture/laboratory eight hours. Materials fee, \$6.

125-3 Structural Mechanics I. Students will learn fundamental principles of mechanics as they apply to stationary structures. Students will apply these principles and use tables and formulas in the determination of loads and the selection of wooden members and steel connectors which will safely carry these loads on floor and roof systems. Lecture three hours. Prerequisite: Information Management Systems 125.

199-1 to 10 Individual Study. Provides first-year students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor and department chair.

203-3 Construction Materials. The student will gain knowledge of physical properties, material composition, and use of materials in residential and light commercial construction. Lecture three hours. Materials fee, \$2.

207-3 Construction Management. Students will gain knowledge of construction management functions, primarily from the point of view of the building contractor. Emphasis will be placed on business operations as they relate specifically to the construction industry. Lecture three hours. Materials fee, \$3.

208-3 Construction Cost Estimating. The student will be able to assist in the preparation of construction cost estimates. Actual working drawings and specifications are used extensively. Emphasis is on quantity take-off and the development of unit costs from given or derived data. Lecture three hours. Materials fee, \$3. Prerequisite: 102.

209-4 Mechanical Systems. The student will obtain knowledge of electrical, plumbing, heating, and air conditioning systems commonly found in residential and light commercial buildings. Emphasis is placed on interpretation of local, state, and national codes. Active and passive solar systems are also studied as alternatives to conventional heating and cooling systems. Lecture four hours.

210-3 Remodeling and Renovation. Students will acquire knowledge of the techniques and technologies necessary to remodel, repair, or renovate existing residential and small commercial buildings. The student will study the design and construction techniques required to convert unused areas into additional living space, additions to existing structures, upgrading of mechanical and electrical systems to meet building codes and repair, renovation and maintenance of older buildings. Lecture/laboratory eight hours. Eight weeks. Materials fee, \$6. Prerequisite: 111.

211-3 Commercial Construction. Students will acquire the technical background necessary to perform operations in the construction of prefabricated single family and multi-family dwellings, agricultural buildings, prefabricated commercial and industrial metal buildings, and prefabricated concrete buildings. Lecture three hours. Prerequisite: 111.

212-3 Scheduling and Advanced Cost Estimating. Students taking this course will study the methods used in preparing a schedule and the methods used in developing a bid from take-off until a contract is finalized. The student will complete a total and comprehensive estimate for commercial buildings and develop the skills and techniques necessary to coordinate and schedule such work. Lecture 2 hours and lab 8 hours per week for eight weeks. Prerequisite: 208.

225-3 Structural Mechanics II. Students will extend their abilities to assist engineers, architects, builders in determining stresses in members of trusses and in selecting proper-sized steel beams or open web joists, wood or steel columns or struts, welded joints, and reinforced concrete beams, footings, and basement walls. Lecture three hours. Prerequisite: 125.

299-1 to 16 Individual Study. Provides students with opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program supervisor, and division chair is required.

303-3 Advanced Concrete Technology. Provides the student with knowledge of the design and use of specialty concrete, admixed concrete, architectural concrete, structural concrete in commercial construction, and precast concrete products. Knowledge of types and methods of steel reinforcement, concrete inspection procedures, and ASTM Testing Standards will be acquired. Successful completion of this course can lead to

certification by the American Concrete Institute as Concrete Field Testing Technician-Grade I. Lecture/laboratory. Prerequisite: associate degree with construction technology major or consent of department.

307-3 Computer Applications in Construction. Will advance the computer training students received in the associate degree construction technology courses. Students will study advanced computer problems in estimating, scheduling, planning, marketing, mechanical system sizing, and performance. Students should learn to interpret computer-generated data and how to modify programs to meet changing industry needs. Prerequisite: associate degree in construction technology or consent of department.

319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

325-3 Quality Assurance in Construction. The student is introduced to the role of the construction inspector, will develop skills of communication with the trades and management, and will acquire knowledge of quality assurance systems, documentation techniques and significant legal aspects of construction failures. Lecture three hours. Prerequisite: 102, 103, 105, 125, 203, 225 and Applied Sciences and Arts 126, equivalent experiences, or consent of instructor.

350-1 to 31 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. This course may be classified as independent study. Prerequisite: consent of instructor.

Curriculum and Instruction (CI)

199-1 The Library as an Information Source. Designed to expose undergraduate students to the basic concepts and structures of the library. This would enable students to use their knowledge in completing reading and term paper assignments as well as in gaining confidence for independent work in the library.

209-2 Philosophy of Creativity. The creative process in developing child. Emphasis will be upon the levels, dimensions and individuality of creativity as it is manifested, observed and nurtured in preschool children.

212-2 Reading College Texts. Textbooks, supplementary materials, and evaluative instruments will be analyzed. Attention will be given to determining usability, feasibility, learnability, and teachability of instructional materials. The following factors will be investigated: content structure and organization, concept density, conceptualization levels, readability, and format.

213-2 Understanding the Elementary School Child. Child development concepts necessary for understanding the elementary school child, with information provided on preschool, primary, and intermediate grade levels.

227-3 Marriage and Family Living. (Same as Women's Studies 286.) A study of relationships and adjustments in family living, designed largely to help the individual. To help student better understand the recent changes that have occurred in marriage and the family in the United States.

237-3 Early Child Development I. Principles of development and guidance of children as applied to home situations. Directed observations of children from 0 through 6. Understanding the social, emotional, physical, and intellectual development of the preschool child.

245-3 Professional Development Seminar. Introduction to early childhood with an emphasis on personal and professional development as preparation for work with children, parents, and professional peers. Acquaints students with the varied career options, approaches to programming, and professional personnel in working with children under eight. Some field trips will be taken.

258-1 to 4 Credit for Work Experience. This course includes work experiences relevant to the student's major program, such as work in day care centers, teacher's aid in public school, or with federal, state, or local agencies or programs that deal with children. Prerequisite: 12 semester hours completed with a grade of B or better in the student's major area of concentration in the C&I department and consent of undergraduate affairs committee, Department of Curriculum and Instruction.

312-3 Teaching Reading in the Elementary School. (Same as Special Education 312.) Examination of the reading process with emphasis on the factors and conditions that affect reading. Emphasis on the formula of a philosophy of reading and its implications in relation to methods, materials, organizational procedures, and evaluation techniques. Prerequisite: junior standing and an overall gpa of 2.5.

313-4 Emergent and Early Reading in the Young Child, 0-8. The examination of factors and conditions which affect emergent and early reading from birth to eight years of age. Emphasis on the formulation of a philosophy regarding children's development and emergent/early literacy. The philosophy provides the foundation upon which to base decisions regarding family and classroom practices, methods, materials, organizational procedures and evaluation techniques. Survey and analysis of appropriate children's literature to support each level of literacy development will be integrated throughout the course. Prerequisite: 318; or concurrent enrollment in 318; or consent of instructor.

315-3 Teaching Mathematics in the Elementary School. (Same as Special Education 315.) Objectives of mathematics education, learning theory as it is related to mathematics, major concepts to be taught, modern approaches to instruction, with emphasis on the use of concrete learning aids. Four class hours and two laboratory hours per week. Prerequisite: junior standing and an overall gpa of 2.5. Mathematics 114 and 314, or consent of instructor.

316-2 Early Childhood Education Methods and Curriculum (K-3). Philosophy and principles underlying the teaching of four-to-eight-years old. Emphasis upon organization, equipment, materials, and methods for promoting growth of young children. Prerequisite: concurrent enrollment in Education 302.

317-3 Guiding Children's Development in the Learning Process. The specific behaviors of parents and teachers of children 3 years to 8 years are examined to determine the effect they have on the development of children's behavior. Guiding behavior through play is emphasized. Prerequisite: 237 or concurrent enrollment in 237.

318-4 Instructional Methods for the Preschool Child. The purpose of this class is to plan the optimum learning environment for the preschool child. Emphasis will be placed on integrated learning and appropriate instructional methods in the content areas of language arts, mathematics, science and social studies. Practicum experiences will be provided in a preschool setting for one half-day per week for the semester for all students. Preschool/primary certification students are required to have concurrent enrollment in Education 312 with placement one half day per week for the semester in a kindergarten setting. Child and Family Services specialization students must enroll for an additional one hour of 395 to provide practical experiences one-half day per week for the semester in a community preschool setting. Prerequisite: 237, 317, consent of instructor for non-early childhood majors or graduate students.

319-3 Instructional Methods for the Primary Child. The purpose of this class is to plan the optimum learning environments for kindergarten through the primary grade three. Emphasis will be placed on integrated learning and appropriate instructional methods in the content areas of language arts, mathematics, science and social studies. Early Childhood Certification students must have concurrent enrollment in one hour of Education 312 to provide practical experience one half day per week for the semester in primary settings. Prerequisite: 237, 317, 318, consent of instructor required for non-early childhood majors, and/or graduate student.

324-2 Early Childhood Social Learning Methods. The objectives, procedures, and methods of designing and implementing social learning environments for early childhood education programs; including an overview of significant early social learning theory and practice. Two hour block required for practicum experiences.

325-3 Young Children and the Arts. The development of creativity in young children. Methods and curriculum that foster creativity in graphic expression, music and creative movement among preschool and primary school children. Prerequisite: Music 101 or consent of instructor.

327-3 Family Studies. Study of changing patterns in family living throughout the family life cycle. Insights into common current family problems typical of each stage of the family life cycle. Prerequisite: 227.

337-3 Early Child Development II. The specific behaviors of both parents and teachers are examined to determine the effect they have on the development of the preschool child's desirable and undesirable behavior. Prerequisite: 237.

390-1 to 3 Readings - Middle School. In-depth reading in various areas of education as related to the fields of (a) curriculum, (b) supervision for instructional improvement, (c) language arts, (d) science, (e) mathematics, (f) reading, (g) social studies, (h) early childhood education, (i) elementary education, (j) middle school, (m) instruction, (n) educational media, (q) family studies. Prerequisite: consent of instructor.

393-1 to 6 Individual Research in Education, Middle School. The selection, investigation, and writing of a research topic under the personal supervision of a member of the departmental staff in one of the following areas: (a) curriculum, (b) supervision for instructional improvement, (c) language arts, (d) science, (e) mathematics, (f) reading, (g) social studies, (h) early childhood education, (i) elementary education, (j) middle school, (m) instruction, (n) educational media, and (o) environmental education, (q) family studies. Maximum of 6 hours to be counted toward a bachelor's degree. Prerequisite: consent of instructor.

395-1 to 3 Field Observation. Students will participate in practical experiences for young children in community settings.

400-3 Simulation and Gaming. Analyzes the role of simulation and gaming in instruction, the availability of commercial games, board games, simulation devices, and computer games, and preparation of teacher-make games and simulations.

402-3 The Study of Cultural Diversity in Education and Family Services. The student examines origins, characteristics of behavior, learning patterns, family constellations, and lifestyles of the diverse cultural groups in our community, state, and nation. Students will identify their own cultural background and biases; recognize diversity resulting from ethnic origin, gender, age, or disability; and experience ways of learning about cultures other than their own that promote constructive communication and integration into all aspects of schooling, teaching, and family services.

404-3 Infant Development. Current theories and knowledge concerning growth and development of infants with related laboratory field observations. Prerequisite: 237 or Psychology 301 or equivalent.

405-4 Methodologies For Group Care of Infants and Toddlers. Application of theories of development of children up to age 3 in a child-centered environment. Development of competencies and skills needed by early childhood professionals. Two hour seminar and four hour practicum required. Prerequisite: 318 and 404.

407-3 to 9 (3 per topic) Diagnostic Teaching Strategies for Classroom Teachers. Diagnostic instruments and teaching techniques with an emphasis on understanding and teaching students underachieving in the areas of: (c) language arts, (e) mathematics, and (f) reading. Prerequisite: (c) 423, (e) 315, (f) 312, and/or consent of instructor.

409-3 Creative Teaching. To assist pre- and in-service teachers in acquiring methods and materials that will improve instruction in the public school classroom, with special attention to the characteristics and needs of students. Prerequisite: Education 315.

410-2 Creative Writing in the Public School. Techniques of encouraging creative writings in the schools.

412-3 to 15 (3 per topic) Improvement of Instruction in Early Childhood Education (Preschool-Grade 3). Examines recent findings, current practices, and materials used in early childhood education in the fields of (c) language arts, (d) science, (e) mathematics, (f) reading, and (g) social studies. Prerequisite: specialized methods course for the field of study selected by the student.

413-3 Language Development of the Young Child, 0-8. The normal language development and communication skills of the young child will be the focus of this course; attention will be given to an integrated, holistic philosophy toward development and learning in young children ages 0-8; specifically focusing upon social and environmental influences on the development of language and literacy, students will observe, listen, record, and analyze samples of young children's communication.

415-3 Modern Approaches to Teaching Middle School Mathematics (Grades 4-8). Examines current mathematics materials and teaching approaches. Hands-on experience with a multitude of teaching aids including microcomputers and problem solving materials. Student exchange of ideas and discussion of activities for classroom use. Prerequisite: 315 or consent of instructor and overall gpa of 2.5.

417-3 Administration of Early Childhood and Family Programs. Planning and organizing programs for pre-school or residential facilities including budgeting, staffing, programming, and evaluation. Prerequisite: 318.

418-3 History and Philosophy of Early Childhood Education. A survey of the history and philosophies of early childhood education with implications for current program practices. Students' analysis of their personal philosophy of early childhood education. Prerequisite: senior or graduate standing; 318; or consent of instructor for graduate students.

419-3 Child, Family and Community Involvement. This course is designed to provide students with the knowledge and skills needed to work successfully with parents and parent groups in individual and community settings. The focus will be on strengthening adult-child relationships and parent-staff relationships in home, school and community settings. Parent involvement in early childhood programs and parent education will be stressed. Prerequisite: 227 and 318; or consent of instructor for non-early childhood majors and/or graduate students.

420-3 Teaching the Adult Functional Illiterate. The emphasis in the course will be on understanding the problems of the individual whose literacy level does not permit full participation in the economic, social, and civic opportunities available to the majority of citizens. Prerequisite: permission of instructor.

423-3 Teaching Elementary School English Language Arts. Oral and written communication processes with emphasis on the structure and process of the English language arts in the elementary school. Specific attention to the fundamentals of speaking English, writing, spelling, and listening. Study of learning materials, specialized equipment and resources. Prerequisite: English 101, 102, Speech Communication 101 or equivalent, and a 2.5 overall gpa.

424-3 Teaching Elementary School Social Studies. Emphasis on the structure and process of teaching social studies in the elementary school setting. Specific attention to the fundamentals of developing social studies objectives, planning units, developing a general teaching model, organizing the curriculum, and evaluating behavioral change. Study of learning materials, specialized equipment, and resources. Prerequisite: completion of two of the following: Political Science 114, Psychology 102, History 110; and overall gpa of 2.5

426-3 An Introduction to Teaching Elementary School Science. Content and methods of elementary school sciences, grades K-8. Emphasis on the materials and strategies for using both traditional and modern techniques of science education. One or more field trips. Prerequisite: junior standing and an overall gpa of 2.5.

427-4 Science Process and Concepts for Teachers of Grades N-8. (Same as Botany 462.) Specifically designed to develop those cognitive processes and concepts needed by elementary school teachers in the teaching of modern science programs. Lecture three hours per week, laboratory two hours per week. One or two additional field trips required.

428-3 Inquiry Skills for Teaching Junior and Senior High School Science. The major focus will be the application of inquiry skills as used in all areas of science instruction at the junior and senior high school levels; students will be expected to demonstrate mastery of basic and integrated science process skills through conducting and reporting results of science investigations.

435-3 Literature for Children. Studies types of literature; analysis of literary qualities; selection and presentation of books and other media for children; and, integration of literature in preschool, elementary, and library settings. Prerequisite: junior standing, a minimum of 6 hours of college-level English, and an overall gpa of 2.5.

437-3 Instructional Technology in Training Programs in Business and Industry. Examines the role that performance and instructional technology plays in current training practices in business and industry. The organization, staffing, budgeting, and evaluation of training and development departments is presented. The kinds of performance problems typically encountered by corporate training departments are addressed. Field trips are expected.

441-3 Multicultural Literature for Children. Identification, selection and evaluation of books and audiovisual materials dealing with various cultural groups such as African Americans, Asian Americans, Native Americans, Hispanic Americans and European Americans. Prerequisite: 435 or consent of instructor.

445-3 Literature for Young Adults. The selection and use of books and other educational media for students in the junior high and senior high school.

452-3 Small Format Video Production in Education. An introduction to small format black-and-white and color video equipment in educational settings. Emphasis is on understanding the role of video as an instructional and informational tool and on the principles of design that determine instructional video's effectiveness.

455-3 Design and Development of Self-Instruction Systems. Introduction to the theory and practice of self-instruction systems with a particular emphasis on the creation of instruction for mastery. Various self-instruction systems are reviewed and procedures for designing, developing, and evaluating these systems are discussed. Includes planning a teaching unit and creating a self-instruction package for the unit.

458-3 Classroom Teaching with Television. Classroom utilization of open and closed circuit television. Emphasis is placed on the changed role of the classroom teacher who uses television. Evaluation of program-

ming, technicalities of ETV, and definition of responsibilities are included. Demonstration and a tour of production facilities are provided.

461-3 Content Literacy Strategies. For middle grade teachers who desire strategies for helping students comprehend content encountered in narrative and expository text. Materials, lesson plans, and teaching strategies to help middle grade students move from basic to more advanced reading, writing, studying, and learning skills are featured.

462-3 Middle and Junior High School Programs. Focuses on the development of middle and junior high school curriculum and the identification of instructional activities which relate to the pre and early adolescent student. It is anticipated that the student will be able to plan and develop teaching units and evaluate procedures complementary to this portion of the school structure.

463-3 Meeting the Social and Emotional Needs of Gifted Children. Deals with strategies for meeting the social and emotional needs of gifted children in the classroom. In particular, this course focuses on low-incidence gifted students, including underachievers, minorities and females. The course will not only cover particular curriculum and instruction strategies designed for this population but also will emphasize strategies for teachers to be more facilitative in assisting these students to accept and realize their potential. Prerequisite: 467 or consent of instructor.

464-2 Student Activities. Analysis of extra-class activities and programs in public schools with a focus on the status, trends, organization, administration, and problems.

465-3 Advanced Teaching Methods. The focus is on a variety of teaching methods and strategies which are appropriate for secondary and/or post-secondary educators. Both individual and group methods are emphasized.

467-3 Methods and Materials in the Education of the Gifted. Content focuses on the most appropriate instructional strategies and materials to be utilized with the gifted. Time spent practicing teaching models, designing materials and developing teaching units. Emphasis placed on techniques for individualizing instruction for the gifted and talented students.

468-3 Science Methods for Junior and Senior High Schools. A performance-based approach to instructional skills common to teaching natural science at the junior and senior high school levels. Three class hours and one micro teaching laboratory hour per week. Prerequisite: Education 315 or consent of instructor.

469-3 Teaching Social Studies in the Secondary School. Emphasis is placed upon instructional strategies and curricular designs in social studies at the junior and senior high school levels. Prerequisite: Education 315 or consent of instructor.

473-3 Teaching in Middle Level Schools. This course is designed to acquaint students with the issues of teaching young adolescents and the unique role teachers must play as interdisciplinary team members, advisers and resource persons to connect schools and communities. Information from current research, area specialists and exemplary practitioners will be used to extend appropriate teaching strategies and supplement background knowledge on special topics related to social, emotional and physical development as it relates to the curricula. Attention is given to the development of classroom resource files for interdisciplinary and advisory programs. Prerequisite: 462, Education 310, 315 or permission of the instructor.

480-3 Introduction to Computer Based Education. Introduction to microcomputers and their uses in the classroom, including computer evolution, languages and authoring systems, instructional modalities, word processing, instructional management, and software evaluation. Utility functions and basic commands in programming are also introduced.

481-3 Instructional Applications of Mainframe Computers. Design, development, and programming of computer-assisted instructional materials using interactive, timesharing computer systems. Study of lesson design and programming, including branching and program flow, display techniques, response judging, teaching strategies, organization, and style.

482-3 Instructional Internet Telecommunications. An introduction to the use of the Internet for instruction. Emphasis is placed upon examining the emerging use of Internet based resources and the role of the teacher in preparing to integrate network based learning activities in the classroom. Additional emphasis is placed on identifying skills needed by learners for involvement with network resources. A variety of selected commercial and non-commercial computer based networks linked to the Internet are examined.

483-6 (3,3) Instructional Applications for Microcomputers. A study of the development and use of microcomputers systems in educational settings. Emphasis is upon the characteristics, capabilities, applications, and implications of microcomputers and microcomputer lessons, with case studies of their integration into the teaching, learning process.

484-3 Multimedia Presentation Systems. Provides learners with skills in designing, developing and conducting classroom based multimedia presentations that involve computer and other electronic delivery systems including videodiscs and CDRoms. Emphasis is placed upon identifying major activities that contribute to effective multimedia presentations regardless of computing software or visual delivery system employed.

486-3 Instructional Authoring Systems. Designed to give students experience using authoring systems, languages and utilities for the design, production, and integration of computer assisted instruction into educational settings. Tools will include Superpilot, Author, and various commercial and consortium authoring tools. Prerequisite: 480 or consent of instructor.

487-3 Microcomputer Applications for Teachers. Laboratory instruction in the use of the microcomputer and software applications representative of those used by the teacher or education specialist in educational settings. An emphasis is placed upon developing skills used by teachers or education specialists which enhance and facilitate the education process.

495-2 to 8 Field Experience. Supervised learning experiences in settings for children and families and public agencies. Prerequisite: 318, 319, 405 and consent of instructor.

496-2 to 6 (2 to 4 per semester) Field Study Abroad. Orientation and study before travel, readings, reports, and planned travel. Includes visits to cultural and educational institutions. Maximum credit hours in any term is 4.

498-1 to 15 (1 to 3 per topic) Workshops in Education. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices in each of the following areas: (a) curriculum, (b) supervision for instructional improvement, (c) language arts, (d) science, (e) mathematics, (f) reading, (g) social studies, (h) early childhood education, (i) elementary education, (j) the middle school, (k) secondary education, (l) school library media, (m) instruction, (n) educational technology, (o) environmental education, (p) children's literature, (q) family studies, (r) computer based education, (s) gifted and talented education, and (t) teacher education. Maximum of six hours toward a master's degree. Prerequisite: consent of instructor.

Dental Hygiene (DH)

101-1 Orientation to Dental Hygiene. The student will be introduced to the profession of dental hygiene. Emphasis is on history of the profession, patient's bill of rights, careers in dentistry and dental hygiene and professionalism. 16 weeks.

126-3 Oral Anatomy and Tooth Morphology. The student will learn to recognize and identify in detail the structures within the oral cavity including the tongue, salivary glands, lips and cheeks, and teeth, both permanent and primary. Laboratory emphasis will be placed on tooth identification, tooth and root morphology, and occlusal relationships to enhance application of instrumentation techniques. Lecture two hours, laboratory two hours.

133-2 Histology and Embryology. The student will learn the microscopic components of the primary tissue groups of the human body and will be expected to identify microscopically in detail, the dental tissues of the oral cavity. The course also enables the student to relate the embryonic development of the head to the normal and abnormal structures of the adult head and oral cavity. Lecture two hours.

199-1 to 10 Individual Study. Provides first-year students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program supervisor, and division chair.

206-2 Oral Anatomy and Tooth Morphology. The student will learn to recognize and identify the structures within the oral cavity. These will include the tongue, salivary glands, lips and cheeks and teeth (both permanent and primary). Laboratory emphasis will be placed on tooth identification and tooth/root morphology to enhance the application of instrumentation techniques. 10 weeks. two hours of lecture weekly. Two hours of lab weekly. Two credit hours. Prerequisite: acceptance into professional sequence or consent of instructor.

207-3 Instrumentation Techniques. Fundamentals of dental hygiene instrumentation and infection control are taught to prepare students for clinical hygiene practice. Laboratory fee \$25. Lecture one hour. Lab four hours. 16 weeks. Prerequisite: acceptance into the professional sequence.

209-3 Dental Hygiene Clinic. The student will perform professional services of a hygienist on designated clinical patients and is expected to demonstrate improvement of skills covered in 137. Additional skill incorporated into clinical procedures include application of fluoride gels, maintenance and sharpening of scaling instruments, recognition and detection of carious lesions, extended or home care education, auxiliary polishing devices, caries etiology tests, and nutritional counseling. Laboratory 12 hours, eight weeks. Laboratory fee: \$50. Prerequisite: 208.

210-3 Patient Assessment Techniques. Assessment theory and techniques are taught to prepare the student to successfully recognize and record normal and abnormal intraoral and extraoral conditions. These assessment skills will be incorporated into treatment planning for individualized patient care. Lecture two hours. Lab two hours. Prerequisite: 101, 207, 226.

212-1 Medical Emergencies in the Dental Office. The student will learn about medical conditions which may affect or alter the provision of oral care. Emphasis is on acquiring and evaluating the medical, dental and drug history. Modification of treatment plans will be discussed. Lecture one hour. 16 weeks. Prerequisite: Microbiology 201.

217-2 Dental Nutrition. The biologic functions of essential nutrients are studied in their relation to growth and development of dental and oral tissues. Nutrition in health and disease is considered in detail; food sources of essential nutrients are identified. Knowledge gained is applied to the nutritional management and prevention of dental health problems in clinical practice through dietary counseling. Lecture four hours, eight weeks. Prerequisite: Chemistry 106, Allied Health Careers Specialties 141.

218A-3 Dental Radiology I. The student is introduced to principles of radiation biology and protection, x-ray production, image formation and intraoral radiographic techniques. Lecture two hours. Laboratory two hours. 16 weeks. Laboratory fee \$25. Prerequisite: acceptance into the Professional Sequence.

218B-2 Dental Radiology II. The student will learn special dental survey techniques including paralleling, occlusal and special views. The student will also identify anatomical landmarks and recognize pathological conditions that appear on dental x-ray image receptors. In the laboratory, the student will receive individual assistance in learning special survey techniques. 16 weeks. two credit hours. Prerequisite: 218a.

220-2 Dental Hygiene Clinic I. The student will apply knowledge and utilize techniques learned in various dental hygiene courses in order to assess oral health status, plan and implement treatment, and evaluate outcomes related to improved oral health. The student will provide preventive, therapeutic and educational

services to clinical patients for prevention of oral disease. Laboratory fee \$50. Clinic six hours. 16 weeks. Prerequisite: 101, 207, 212 or concurrent enrollment in 212.

226-2 Anatomy of the Head and Neck. The goal of this course is for the dental hygiene student to acquire clinical problem solving skills through a basic understanding of the gross anatomy of the head and neck region of the human body. Through a regional approach to the head and neck, the student will be able to synthesize solutions to clinical problems by understanding the morphological and functional interrelationships of anatomical structures. 16 weeks. two credit hours. Prerequisite: acceptance into the professional sequence.

233-2 Histology and Embryology. The goal of this course is to enable the dental hygiene student to develop a basic understanding of the microscopic structure of the primary and dental tissue groups of the human body. This course also enables the student to relate embryonic development to the normal and abnormal structures of the head and oral cavity. This background will prepare the student to differentiate between normal and abnormal clinical manifestations in subsequent courses. 16 weeks. two credit hours. Prerequisite: acceptance into the professional sequence.

240-2 Dental Pharmacology and Anesthesia. The student will recognize the various types of drugs, their actions and effects on tissues of the body. Special emphasis will be placed on those drugs most commonly prescribed by the dentist. The student will study the anesthetics most commonly used in a dental office and the techniques of administering them. Lecture two hours. Prerequisite: Chemistry 106, Allied Health Careers Specialties 141, Microbiology 201.

247-3 Preventive Oral Care. The student will prepare for the role of oral health educator and consumer advocate. The dental hygiene process of assessment, planning, implementation and evaluation is applied for the prevention of oral disease. Laboratory techniques for assessing disease processes will be applied. Lecture two hours. Laboratory two hours. 16 weeks. Prerequisite: 126, 226 and Microbiology 201.

299-1 to 16 Individual Study. Provides students with opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program supervisor, and department chair is required.

315-2 Ethics and Jurisprudence for Dental Hygienists. Ethical, and legal issues related to the practice of dentistry and dental hygiene are studied. Case situations are evaluated to determine appropriate management in accordance with the principles of dental ethics and jurisprudence. Review and interpretation of dental practice acts and licensure requirements are included. Lecture two hours. 16 weeks. Prerequisite: 220

318-4 General and Oral Pathology. The student will learn principles of general pathology in relationship to diseases of the teeth, soft tissues and supporting structures of the oral cavity. Early recognition of abnormal oral conditions is emphasized. Lecture four hours. 16 weeks. Prerequisite: 226 and 233.

319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

320-3 Dental Hygiene Clinic and Radiology II. The student will utilize previous and concurrent information and skills in the treatment of clinical patients. Instrumentation, patient assessment, prevention, radiology and care of special populations will be stressed. Adjunctive treatment methodologies will be introduced. Laboratory fee \$50. Lecture one hour. Clinic six hours. 16 weeks. Prerequisite: 210, 218, 220, 247, and 318,

322-2 Operative Oral Care and Adjunctive Procedures. This course includes an overview of various materials and procedures used in operative, endodontic, orthodontic and prosthetic dentistry. Emphasis is placed on the role of dental hygienists in explaining these procedures to clients/patients and in adapting dental hygiene services. Adjunctive procedures which augment operative care are taught in laboratory. Lecture two hours. Lab two hours. 16 weeks. Prerequisite: 320.

340-2 Dental Pharmacology. This course is designed to teach the student about different drugs used in dentistry, the biochemical activity of each, appropriate use, interactions with other drugs or systemic conditions and some basic pharmacology terminology. Pharmacotherapeutics will be presented to the dental hygiene student in a meaningful, practical manner. Emphasis will be placed on clinical effects, dosages, adverse effects and contraindications of drugs commonly prescribed in dentistry or which patients may be taking under direction of other health care providers or under self-direction. Information will be presented from a perspective to include pharmacological basis for drugs, the need for and use of a medical history, legal aspects related to these subjects. The course format is lecture, two hours weekly over sixteen weeks. 2 credit hours. Prerequisite: Chemistry 140a,b, Allied Health Careers Specialties 141.

341-3 Periodontics. The student will be introduced to identification, treatment and prevention of pathological conditions that affect the periodontium. Emphasis will be placed on anatomy and histology of the periodontium, current advances in periodontics and soft tissue management. Lecture two and one-half hours. Laboratory one hour. 16 weeks. Prerequisite: 226 and 233.

347-2 Community Oral History. The student is introduced to the general principles of dental public health, community dentistry and epidemiology. Also presented is an overview of current community based oral health programs and roles of a community based dental hygienist. Lecture two hours. 16 weeks. Prerequisite: 247, Sociology 108, Health Care Management 365 or concurrent enrollment.

348-2 Community Oral Health Practicum. Principles of community oral health are applied through practical experience. Programming phases of assessment, planning, implementation and evaluation are studied in detail. The student will develop and present dental health education programs according to these principles. Lecture one hour. Practicum two hours. 16 weeks. Prerequisite: 347 and Speech Communication 101

350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations of-

ferred through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. This course may be classified as independent study. Prerequisite: consent of instructor.

355-3 Dental Hygiene Clinic and Radiology III. The student will provide comprehensive individualized treatment using all aspects of dental hygiene care in the clinical setting. Emphasis is on mastery of skills and techniques previously introduced. Laboratory fee \$75. Lecture one hour. Clinic six hours. 16 weeks. Prerequisite: 320 and 341.

388-2 Career Options in Dental Health. The course presents an overview of the various career options available in the field of dentistry. Advanced dental hygiene clinical practice, education, marketing, nursing home and other long term resident facilities are possible career options to be examined. The student will select and participate in career options of interest. The experiences will correlate to advanced dental hygiene education and will be designed to meet the needs of the individual student and the selected career option. Two hours lecture. Prerequisite: the student must have completed one semester of the dental hygiene associate degree sequence or have consent of the instructor.

414-2 Oral Health Management of Special Populations. Presents a comprehensive approach to the oral care of special needs patients and populations. Student will be introduced to a variety of settings in which dental care and oral health education may be provided. Provides opportunity to plan and implement programs and treatment. Not for graduate credit. 16 weeks. Lecture one hour. Laboratory: two hours seminar.

415-2 Rural Health and Geriatric Internship. The student will utilize preventive, therapeutic and educational measures in combination with principles of public health to provide care to clients in rural health settings and to the geriatric population. Emphasis will be placed on the ability to work with area health care providers in an interdisciplinary approach to meeting oral health care needs of these special populations. Seminar one hour. Field experiences six hours. 16 weeks. Prerequisite: 348, 350, 414 or concurrent

440-2 Interpretation and Review of Dental Literature. This course includes an investigation of various types of sources used for accessing literature related to the practice of dental hygiene. A review of general research principles and statistics is included. Students conduct critical reviews of research articles, utilize various computer searches and write abstracts of published research reports. Lecture two hours, 16 weeks, two credit hours, not for graduate credit. Prerequisite: Health Care Management 365, Dental Hygiene 347 or concurrent enrollment, or consent of faculty.

441-3 Advanced Periodontics and Pain Control. Cotherapy treatment of the complex periodontic patient by the dentist and the dental hygienist will be practiced with development of appropriate therapies for specific case types. Emphasis will be placed on comprehensive evaluation and treatment planning, pain control, adjunctive antibiotic therapy, instrumentation, soft tissue management, evaluation and maintenance. Laboratory fee \$50. Lecture one hour. Clinic six hours. 16 weeks. Not for graduate credit. Prerequisite: 322, 341, 355, or consent of faculty.

442-3 Simulated Clinical Office Practice. The student will utilize skills and knowledge from all courses to provide professional dental hygiene care to clients in a clinical setting that simulates private practice. Emphasis will be placed on efficiency and quality of care to facilitate the transition from practice in the university clinical setting to the private practice setting. Lecture one hour. Clinic eight hours. 16 weeks. Not for graduate credit. Prerequisite: 441 or consent of the faculty.

Dental Technology (DT)

102-4.5 Tooth Anatomy. The student will be able to write definitions of the nomenclature of teeth; draw five different peripheral views of maxillary and mandibular teeth; carve maxillary and mandibular teeth in plaster, three times natural size and in wax, natural size; wax maxillary and mandibular teeth on dentiform models. Lecture three hours. Laboratory 17 hours. Five weeks.

103A-4.5 Complete Dentures I. The student will be able to write the steps of denture construction; identify and use lab stone, lab plaster and acrylic resins; construct edentulous casts, custom trays, base plates, occlusal rims, mount casts on non-adjustable articulators; and set up, contour, invest, and process and finish a complete denture. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 102.

103B-4.5 Complete Dentures II. The student will be able to describe the theory inherent in all phases of full denture construction; bead and box an impression, set up anatomical, semi-anatomical, and non-anatomical teeth on non-adjustable and semi-adjustable articulators; select and set up teeth for different classes of arch forms; contour, flask, process, and finish complete dentures; relines, rebase, and repair full dentures; set up and process an immediate denture and fabricate a surgical tray. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 103a.

104A-4.5 Removable Partial Dentures I. The student will be able to write the basic steps of partial denture construction, identify and use impression materials, gypsum products, surveyors, dental waxes, clasp designs, and partial denture alloys; mount master casts, survey, design, and cast frameworks. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 102.

104B-4.5 Removable Partial Dentures II. The student will be able to describe and do the planning, designing, and surveying of partial dentures; construct refractory casts, wax, invest, and finish several partial denture frameworks; articulate, set up denture teeth on partial frameworks, wax, invest, process, and finish acrylic bases; and repair broken frameworks. Lecture three hours. Laboratory 17 hours. Prerequisite: 104a.

110-4 Dental Occlusion. The student will be able to write and identify the basic anatomy of the oral facial structure, and the theory inherent to occlusion. The theory will include the physiology of occlusion, the determinants of occlusion, and popular occlusion theories and techniques. The laboratory aspect will include building wax occlusions such as cusp/marginal ridge and cusp/fossa occlusal contacts, including waxing of natural dentition. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 103b, 104b.

113A-2 Science of Dental Materials. The student will be able to: identify orally, as well as written, the physical and mechanical properties of dental materials, the uses and composition of dental gypsum products, namely, plaster, stones, and investments; impression materials, dental resins, dental cements, and pit and fissure sealants. Lecture two hours.

113B-2 Science of Dental Materials. The student will be able to identify orally, as well as written, the physical and mechanical properties of metals and alloys, namely, dental golds, chrome cobalt and nickel cobalt alloys; the control of their physical properties, namely, strain hardening, alloying and heat treatment, the chemistry of tarnish and corrosion, dental waxes, casting and soldering techniques, dental porcelains and polishing agents and abrasives. Lecture two hours.

128-1 Oral Anatomy. The student will be able to identify the anatomical features of the head and oral cavity; identify the blood and nerve supply to the oral cavity and surrounding area; be able to list the muscles of mastication, and know the origin and insertion of each muscle; identify the anatomical parts of the maxilla and mandible; differentiate the movements of the mandible; and be able to identify the temporomandibular articulations. Lecture one hour.

143-1 Orientation to Dental Technology. The student will be able to identify pertinent dates and contributions made by people in the history of dentistry and the dental laboratory industry; identify specialties of dentistry and dental technology; identify organizations affiliated with the dental laboratory industry; identify ethics and laws regulating the dental profession; identify laboratory safety procedures, equipment maintenance, infection control, areas of possible cross contamination in the dental laboratory, and identify current issues impacting dentistry.

199-1 to 10 Individual Study. Provides first-year students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program supervisor, and department.

202-4.5 Orthodontics and Pedodontics. The student will be able to pour and trim orthodontic models, fabricate a maxillary Hawley, mandibular Hawley, holding arch, space maintainer, arch expander, tongue thrust and thumb habit appliances, occlusal palatal splint, bite planes, operate welding machine, orthodontic model trimmer, orthodontic blowpipe, write the gauges of wire that are used for the orthodontic appliances, identify the functional appliances and their clinical applications, and write the theory associated with the use of the appliance. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 110.

204A-4.5 Crown and Bridge I. The student will be able to write definitions of the nomenclature for crown and bridge I prosthetics; communicate orally and in writing the theory necessary for successful completion of the laboratory projects; construct working models, full cast crowns, inlays and veneer crowns. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 202.

204B-4.5 Crown and Bridge II. The student will be able to write definitions of the nomenclature for crown and bridge II prosthetics; communicate orally and in writing the theory necessary for completion of the laboratory projects; construct working models, multiple unit bridgework, broken stress bridgework, crown under an existing partial denture, opposing crowns, and soldering procedures. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 204a.

205-1 Dental Laboratory Management. The student will be able to identify how the following areas of management relate to the dental laboratory technician and the dental laboratory industry: principles and practices of management, marketing management, financial management, human resource management, and production management.

206A-4.5 Dental Ceramics I. The student will be able to construct porcelain jackets and porcelain-to-ceramic alloy restorations. Included will be cast preparation, waxing for porcelain bonded to ceramic alloy, casting, finishing, and porcelain firing techniques. Related theoretical concepts will be presented. The correct use and function of finishing and casting equipment and porcelain furnaces will be included. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 202.

206B-4.5 Dental Ceramics II. The student will be able to construct porcelain bonded to ceramic alloy restorations. Included will be veneer and full coverage porcelain restorations and bridges using modern methods and techniques. Fabrication of porcelain laminates will be included. Also, the theory involved in conventional and new techniques for porcelain-to-metal restorations will be included as well as color control, and staining procedures. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 206a.

210-4.5 Applied Prosthodontics. The student will be able to complete removable prosthodontic cases per directions of the dentist's prescription. Emphasis is on fabricating removable dental prosthesis on practical laboratory models. Laboratory 20 hours. Five weeks. Prerequisite: all 100 and 200 level dental technology courses.

299-1 to 16 Individual Study. Provides students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program supervisor, and department chair is required.

319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. This course may be classified as independent study. Prerequisite: consent of instructor.

East Asia (EA)

300-3 Masterpieces of Oriental Literatures. Lectures and collateral readings of representative oriental literary works in English translation with special attention to literary forms and thought from ancient to contemporary China and Japan. No knowledge of an oriental language required.

370-1 to 6 (1 to 3 per topic) Topics in East Asian Cultural Traditions. Selected topics in East Asian cultural traditions. May be repeated to a total of six hours with the consent of the department. No prerequisite. Taught in English.

Economics (ECON)

113-3 Economics of Contemporary Social Issues. (University Core Curriculum) An examination of the basic economic problems confronting United States society and the world today. The analysis is undertaken utilizing fundamental economic concepts with emphasis on alternative economic policies. Topics as diverse as health care, the national debt, crime, pollution and international trade are addressed.

240-3 Introduction to Microeconomics. Study of businesses, consumers, and the government and their effects on prices, output and income distribution. Current economic problems will be used as illustrative examples. Prerequisite: satisfaction of the University Core Curriculum mathematics requirement.

241-3 Introduction to Macroeconomics. Determination of income, employment, output and price levels in the national economy; government taxation, expenditure, and monetary policies to solve problems such as inflation and unemployment. Prerequisite: satisfaction of the University Core Curriculum mathematics requirement.

300-3 to 9 Contemporary Economic Problems. A study of one or more contemporary economic problems. Problems chosen vary from semester to semester and the topic will be announced in advance. Prerequisite: 113, 240, 241 or consent of instructor.

301-1 to 6 Economic Readings. Readings in books and periodicals in a defined field, under direction of one or more faculty members. Periodic written and oral reports. Prerequisite: consent of instructor and department chair.

3021-3 History and Philosophy of the World's Economic Systems. (University Core Curriculum) An investigation into how economic systems coexist with, and determine, or are determined by, the political and social structures in internationally diverse countries. Utilizing both economic concepts and an institutional approach the evolution of systems in nations such as Russia, Japan, the United States, China and others will be explored.

303-3 Poverty and the Economy. Poverty as a study of income inequality. Economic determinants of income inequality are isolated and related to current policy proposals.

308-3 Economics and Business Statistics. Survey of the foundations and applications of the principal statistical methods used in economic and business decision making. Included are probability theory, probability distributions, and testing hypothesis about, and estimation of, the important types of population parameters. Prerequisite: Mathematics 140 or equivalent.

310-3 Labor Problems. A comprehensive overview of the relation of labor to the United States economy. Included are the history of labor in the United States; analysis of institutions affecting labor; the theory of wage and employment determination; as well as analyses of unions and collective bargaining, discrimination, unemployment, and the distribution of income. Prerequisite: 240 or consent of instructor.

315-3 Money and Banking I. Study of the operation of the money and banking system in the United States. Stresses Federal Reserve control of the money supply and credit conditions to combat inflation and unemployment. Monetary arrangements and problems among nations are also considered. Prerequisite: 241 or consent of instructor.

322-3 Introduction to Economic Development. An analysis of the preconditions, processes, and problems involved in economic development. Both the theory and policy relevant to development, with special emphasis on the developing or emerging economies, are stressed. Prerequisite: 240 and 241 or consent of instructor.

329-3 Introduction to International Economics. Introduction to the principles of international economics. Stresses the relationship between the balance of payments and the United States economy, the determinants of deficits and surpluses, and policy options to correct an imbalance. Prerequisite: 240 and 241 or consent of instructor.

330-3 Public Finance. Effects of government spending and taxing activities on the rest of the economy. Analysis of government debt, the federal budgetary process, and various taxes used in the United States. Prerequisite: 240 or consent of instructor.

333-3 Economics of the Environment. Factors which lead to physical and human deterioration in a market economy. Consideration of solutions to such problems as urban decay, overpopulation, and pollution. Prerequisite: 240, 241 or consent of instructor.

334-3 Health Economics. Factors underlying the demand for and supply of health and medical care services. Included are the market, voluntary nonprofit, and governmental sectors of the industry. Special topics are the regional coordination of hospital facilities and services, the consumer price index and the measurement and costs of control programs.

340-3 Intermediate Microeconomics. A survey of theories of household, firm, and government economic behavior in the determination of competitive and non-competitive market prices. Emphasis is on understanding the United States economic system and on evaluating existing and proposed government microeconomic policies designed to improve the system. Not open to students who have had Economics 440. Prerequisite: 240 or consent of instructor.

341-3 Intermediate Macroeconomics. The determinants of fluctuations in aggregate economic activity, unemployment and inflation. An analysis of the behavior of consumption and investment, the impact of government monetary and fiscal policies, and factors affecting the rate of economic growth. Not open to students who have had Economics 441. Prerequisite: 241 or consent of instructor.

361-3 Regional and Urban Economics. A survey of regional and urban economic growth and the associated problems, including disparities among regions in income and employment. Examination of governmental policies aimed at reducing or eliminating such problems as depressed areas and urban blight. Prerequisite: 240, or 241, or consent of instructor.

374-3 Industrial Organization. A survey of economic theories and empirical studies on the nature and consequences of business rivalry in imperfectly competitive markets. Includes such topics as oligopoly, economics of scale, natural monopoly, introductory game theory, advertising, imperfect information, spatial competition, patents, and innovation. Prerequisite: 240.

408-3 Economics and Business Statistics II. A continuation of 308 which includes the construction, interpretation, and use of economic data. Topics include correlation, regression, decisionmaking, index numbers, time series analysis, forecasting, and other statistical techniques used in analyzing economic and business data. This course will not count as graduate credit for economics majors. Prerequisite: 308 or equivalent.

416-3 Money and Banking II. An examination of the principal institutions whose joint actions determine the supply of money in the United States economy. Emphasis is placed on the commercial bank operating as a firm within the Federal Reserve System. Policy issues are examined for the regulation of the banking industry as well as for the control of the domestic money supply. Prerequisite: 315, or 340, or 341, or consent of instructor.

419-3 Latin American Economic Development. Special attention to contemporary policy issues and alternative strategies for development. Among the topics included are inflation and financial reform, international trade and economic integration, foreign investment, and agrarian reform. Prerequisite: 322, or 340, or 341, or consent of instructor.

420-3 The History of American Growth in the 20th Century. An analytical survey of American growth in the present century. Concentrates on problems associated with the United States' role as a world economic power and changes in economic institutions engendered by rapid technological change and the need to cope with such problems as income distribution, equity, the growing public sector, inflation, unemployment, and others. Prerequisite: 340, or 341, or consent of instructor.

429-3 International Trade and Finance. Analysis of the pattern and volume of world trade and capital flows; effects of trade and payments on the domestic economy; problems and methods of adjusting to change in the balance of payments. Prerequisite: 340 and 341 or consent of instructor; and Mathematics 140 or 150, or consent of instructor.

431-3 Public Finance II. State and local. Analysis of the economic effects, problems, and alternative solutions concerning state and local government expenditures, revenues, and debt. Prerequisite: 330 or 340 or 341 or consent of instructor.

436-3 Government and Labor. Influence of government and law on collective bargaining, on the internal operation of unions, and on job discrimination in the public and private sectors. Prerequisite: Political Science 114 and Economics 113 or equivalents or consent of instructor.

440-3 Price, Output, and Allocation Theories. A systematic survey of theories of product prices, wage rates, rates of production and resource utilization under conditions of competition, monopolistic competition, oligopoly and monopoly markets. Emphasis is on developing analytical tools useful in the social sciences. Not open to students who have had Economics 340. Prerequisite: 240 or consent of instructor.

441-3 Contemporary Macroeconomic Theory. An examination in the causes of inflation, unemployment, and fluctuations in aggregate economic activity, factors affecting consumption and investment, and the sources of economic growth. Emphasis is on understanding contemporary United States macroeconomic problems and the options for fiscal, monetary, and income policies facing the United States government. Not open to students who have had 341. Prerequisite: 241 or consent of instructor.

443-3 Honors Seminar in Economics. Application of the tools of economic analysis to the study of contemporary social problems. Enrollment limited to economic majors who have a minimum cumulative grade point average of 3.0 or higher in all prior economics courses. Economics graduate students are not permitted to enroll in this course. Prerequisite: 340 and 341; and Mathematics 140 or 150, or consent of instructor.

450-3 History of Economic Thought. An analytical study of the development of economic ideas, with special reference to historical and societal context, central thrust, and impact. Such benchmark figures as Smith, Marx, Marshall, Veblen, and Keynes are highlighted and major schools of economic thought are identified. Prerequisite: 240 and 241; or 113; or consent of instructor.

463-3 Introduction to Applied Econometrics. Applications of statistical tools to specific economic problems. Numerous examples will be examined in order to achieve this goal. Emphasis will be given to model misspecification, non-classical estimation techniques, data analysis, and simultaneous equations. Prerequisite: 408 or consent of instructor.

465-4 Mathematical Economics I. A systematic survey of mathematical economics. Application of basic mathematical tools to economic analysis, and a restatement of economic theory in mathematical terms. Prerequisite: 340 or 440, and Mathematics 140 or consent of instructor.

474-3 Antitrust and Regulation. The theory and practice of government policy toward imperfectly competitive markets. Includes such topics as merger policy, unfair trade practices, regulation of natural monopolies, peak load pricing, safety and environmental regulation, and consumer protection. Prerequisite: 340 or 374.

479-3 Problems in Business and Economics. Application of economic theory and tools of analysis to practical business problems. Cost and demand functions, and forecasting are analyzed from a policy standpoint. Prerequisite: 240; 308 or Management 208; Marketing 304; Mathematics 140 or 150 or consent of instructor.

Education, College (EDUC)

258-1 to 4 Credit for Work Experience. Credit granted for prior work experience relevant to the student's major program in which specific experiences with children or youth can be documented. Prerequisite: 310, 315, and consent of coordinator of professional education experiences.

259-1 to 60 Occupational Education Credit. Credit for educational experiences in training schools and institutes relevant to the particular departmental program. Credit hours to be determined by the associate dean for undergraduate studies.

300-1 to 10 Experimental Education. Offered for purposes of testing new and experimental courses and series of courses within the College of Education. Prerequisite: consent of instructor.

308-3 Characteristics and Methods for Teaching Exceptional Children. For preservice teachers and school personnel who serve directly and indirectly handicapped children and youth. The course focuses on providing the essential characteristic information and skills to appropriately educate the handicapped in a variety of settings. Prerequisite: 310, 314.

310-1 to 2 Study of Teaching. Requirement in professional education sequence which cannot be waived. Introduction to major roles assumed by classroom teachers. Orientation to the Teacher Education Program Reflective Teaching Model and to the teaching profession. During the semester, there are four class meetings, lasting two hours each, scheduled to be held on-campus. Participation and observation in public schools two one-half days per week or one full day per week on Tuesdays, Wednesdays, or Thursdays. Placement in public school settings coordinated by College of Education Student Services. Students who have completed 36 clock hours of observation/participation in an approved course prior to enrollment in 310 may enroll for one semester hour. All sections of 310 require a restricted class card which may be obtained in Wham 135. 72 clock hours. Prerequisite: admission to the Teacher Education Program.

311-2 School and Society: Historical, Sociological, and Philosophical Perspectives. A requirement in the professional education sequence. Fulfills the minimum state certification requirement in the history and philosophy of education. Assists students in developing an understanding of the organization, function, and role of schools in the United States.

312-1 to 8 Field Observation and Participation. Allows the pre-service teacher education student to observe and participate in activities and experiences relating to the offerings of their major department. These experiences will be correlated with the offerings of the student's major department, and the experiences will be designed to meet the needs of the individual student. Enrollment in this course will be coordinated by the student's major department. Placement in public school settings will be coordinated by the College of Education Student Services. Prerequisite: 310, 311, 314 and 315 or concurrent enrollment.

314-2 Human Growth, Development, and Learning. A requirement in the professional education sequence. This course deals with factors involved in the teaching-learning process including cognitive development, socio-personal characteristics, socio-cultural characteristics, motivation for learning, and principles of school learning. Prerequisite: Psychology 102 or equivalent.

315-3 Organizing and Directing Instruction. A requirement in the professional education sequence. Techniques and procedures applicable to effective teaching including planning for instruction, instructional design, and general teaching strategies. Teaching skills will be demonstrated by the students and evaluated by the instructor on a regular basis in the Teaching Skills Lab. 12 lab hours. Laboratory work also required in media production laboratory and microcomputer laboratory. A \$10 laboratory fee is required. Prerequisite: 310 or concurrent enrollment, 314 and admission to the Teacher Education Program.

316-2 Classroom Management and Discipline. Includes techniques and procedures intended to provide teachers with skills for managing groups of students. Content includes management techniques, discipline models, child abuse identification and reporting, field observation, and data collection in the public schools. Public school assignments are one-half day per week on Tuesdays, Wednesdays, or Thursdays for ten weeks beginning with week five. Placement in public schools is coordinated by the College of Education Student Services. All sections require restricted class cards. Thirty clock hours. Prerequisite: 310, 314 and admission to the Teacher Education Program.

317-2 Evaluation of Learning and Teaching. Covers construction and use of teacher-made tests of classroom learning; interpretation and use of standardized tests of achievement, aptitude, and scholastic ability; procedures for determining and reporting grades; and procedures for measuring and evaluating instructional effectiveness. Prerequisite: 310, 314, 315, admission to the Teacher Education Program.

400-1 to 4 Student Teaching. A requirement in the undergraduate professional education sequence, 400 represents preliminary student teaching experiences necessary for certification by entitlement. For undergraduate students who are majoring in special education and are seeking entitlement to more than one teaching certification in the state of Illinois. Enrollment in this course must be arranged through the College of Education Student Services. For undergraduate credit only. Prerequisite: admission to the Teacher Education Program, acceptance for student teaching, and concurrent enrollment in 312.

401-1 to 12 Student Teaching. A requirement in the undergraduate professional education sequence, 401 concludes the student teaching experience necessary for certification by entitlement. For undergraduate credit only. Prerequisite: admission to the Teacher Education Program and acceptance for student teaching.

402-5 to 8 Student Teaching for Provisionally Certified Teachers. Offered for purposes of converting a provisional teaching certificate to a standard teaching certificate. The student teaching experience may be pro-

vided for in the position of employment, without pay, under the supervision of a university supervisor. Enrollment in this course must be arranged with the coordinator of professional education experiences in the College of Education Student Services. Prerequisite: consent of instructor, provisional certificate, and teaching experience. For undergraduate credit only.

450-1 to 10 Experimental Education. Offered for purposes of testing new and experimental courses and series of courses within the College of Education. Prerequisite: consent of instructor.

Educational Administration and Higher Education (EAHE)

402-1 to 3 Principles of Student Personnel Group Work. Acquaints the student with group work possibilities and functions in higher education.

430-3 History of Education in the United States. An historical study of the problems of American education.

432-3 Education and Social Forces. A study of the social forces that shape educational policies in the United States.

454-3 Contrasting Philosophies of Education. An examination of current educational problems and trends in the light of contrasting philosophies of education.

455-3 Introduction to Adult and Continuing Education. Introduces the multifaceted areas of adult and continuing education in traditional and non-traditional settings by reviewing and studying philosophies, directions, program efforts, and activities associated with them.

495 (3 to 9) (3,3,3) Workshop in Adult Education. The foci for these workshops are to provide quality educational experiences for students and practitioners in the field of adult and continuing education in three major areas: (a) current issues, (b) improvement of instruction and programs in adult education, and (c) evaluation in adult education.

Educational Psychology (EPSY)

100-2 Decision Making for Career Development. Examination of factors relating to career decision making. Emphasis on the continuous use of learned processes and information in vocational development. Supplementary group guidance and counseling sessions required. Charges may be assessed to cover the cost of administering and scoring occupational interest surveys to be given during the course. These charges should be less than \$10.

307-3 Educational Psychology. The basic factors involved in the teaching-learning process including student characteristics, motivation, learning, and teacher-student relationships. The course activities are intended to prepare the student with a basic foundation in educational psychology for the purpose of teaching.

380-1 to 4 Practicum in Instructional Roles. One semester hour of credit for every three modules selected. Application of educational psychology in a practical teacher-learner situation. Class members conduct actual instructional activities with individuals or groups of students. Field activities are required and the student may be required to purchase additional materials not to exceed \$20. Prerequisite: consent of instructor.

402-3 Basic Statistics. A master's level terminal statistics course. Emphasis on descriptive statistics, graphical representation of data, correlation, and simple regression. Includes an introduction to hypothesis testing procedures and analysis of variance.

412-3 Human Behavior and Mental Health. A study of the principles of human needs, mechanisms of adjustment, and factors and conditions in life that tend to affect mental health. Prerequisite: junior or senior standing.

418-3 Psychology of the Classroom. Intended to develop interpersonal skills such as values clarification, empathy, and listening. Strategies for the resolution of conflicts and reasons for students demonstrating disruptive behavior will be discussed. Role-playing, group processes, concepts and activities in behavior modification, and activities related to concepts of discipline will be examined. Content should be suited to parents, teachers, and other professionals.

422-3 Introduction to Individual and Group Assessment. The student will be introduced to the basic testing process and the problems related to individual group assessment and will be expected to choose a project for study and investigation. The project must be related in some way to the role and function of the counselor in different settings. The various types of assessment instruments and the manner in which the data derived therefrom can be employed in consultation.

442-3 Introduction to Counseling. The following topics will be covered: purposes of counseling; counselor roles in various settings; approaches to counseling; counseling activities; and application of the above.

481-1 to 12 Seminar. Conducted by staff members and distinguished guest lecturers on pertinent topics. Prerequisite: consent of instructor and department.

482-1 to 3 Seminar in Marriage and Family Counseling. Seminar will focus on current clinical and research topics in the field of marriage and family counseling and the general issues that emerge from the marriage and family counseling practicum. Prerequisite: 494a or b, 490, concurrent enrollment in 494E and permission of instructor.

490-3 Introduction to Marriage and Family Counseling. Problems and techniques of premarital, marital, divorce, family, and family crisis counseling. Counseling individuals singly, in family units, and in groups.

491-1 to 6 Special Research Problem—Individual Study. For majors. Formulating, investigating, and reporting on a problem in the area of applied psychology. Prerequisite: advanced standing and consent of department.

493-3 Counseling Skill Development. Through simulated counseling situations and extensive examination of counseling case studies, counseling skills are examined and practiced.

494A-3 School Counseling Practicum. A combined seminar, laboratory, and field experience representing the central focus of the program in school counseling. Enables the student to practice the role of the counselor under close supervision. Graded *S/U* only. Prerequisite: 493, 538 and admitted to counseling program.

494B-3 Counseling Practicum. Practice of counseling skills with different populations in varied settings. The professional setting depends on the student's interest area. Individual and group supervision are provided. Use of tape recorder is required. Graded *S/U* only. Prerequisite: 493, 538 and admitted to counseling program.

494C-3 Career Group Practicum. Supervised in the creation and maintenance of small group process for the purpose of career development. Application of theoretical models is stressed concurrently with entry level skills in the facilitation of small groups and career counseling. Graded *S/U* only. Prerequisite: 542, 543 and admitted to counseling program.

494D-3 to 6 Practicum in School Psychology. Observation and participation in case conferences related to the development of psycho-educational assessment and planning, including teacher and parent consultation, field observations, and psychometric applications. Graded *S/U* only. Prerequisite: 533, 546 and consent of instructor.

494E-1 to 6 Practicum in Marriage and Family Counseling. Supervised on-campus counseling experience with couples and families. Supervision will be individual as well as within the context of a therapy team. Graded *S/U* only. Prerequisite: 493, 494a or b, 490, concurrent enrollment in 482 and consent of instructor.

Electrical Engineering (EE)

Safety glasses, a hand-held scientific calculator, and textbooks are required of each electrical engineering student.

101-3 Introduction to Electrical Engineering. Concepts and fundamental laws of electrical engineering. Mathematics in modeling and analyzing electric components and systems. Demonstrations of electric and electronic circuits and devices. Applications of computers. Opportunities for electrical engineers in industrial, academic, medical and governmental settings. Mandatory Pass/Fail.

222-3 Introduction to Digital Computation in Electrical Engineering. Digital computation to solve basic problems in electrical engineering. Analyzing problems, flowcharting, coding, diagnosing, executing and verifying solutions. Programming in C language. Prerequisite: Mathematics 111.

225-3 Introduction to Digital Systems. Number systems. Boolean algebra. Combinatorial circuits; minimization. Sequential circuits. Logic devices. Introduction to switching algebra. Prerequisite: Engineering 222.

235-4 Electric Circuits I. Concepts and basic laws in analysis of AC and DC linear circuits. Mesh and nodal methods, Thevenin's and Norton's theorems, superposition principle, and phasor notation. Transients. Basic instrumentation. Lecture and laboratory. Prerequisite: Mathematics 250.

327-4 Sequential Circuit Design. Introduction to switching algebra, logic gates, description synthesis and organization of asynchronous and a synchronous sequential circuits, flip flops, registers, counters, and memory. Lecture and laboratory. Laboratory fee of \$10 to help defray cost of consumable items. Prerequisite: 225.

336-3 Electric Circuits II. Three phase balanced circuits. Mutual inductance. Series and parallel resonance. Laplace transform and its applications. Transfer function. Two port network. Prerequisite: 235 with a grade of C or better and concurrent enrollment in Mathematics 305.

345-4 Electronics. Fundamental electronics and basic signal-processing. Characteristics and typical applications of analog and digital electronic modules. Operational amplifiers. Fundamentals of transistors. Lecture and laboratory. Laboratory fee of \$10 to help defray cost of consumable items. Prerequisite: 235 with a grade of C or better and concurrent enrollment in 336.

355-3 Signals and Systems. Concept of continuous and discrete signals and systems. Singularity functions. Differential and difference equations. Convolution. Fourier transform. Z transform. System transfer function. State variables. Stability. Prerequisite: 336 or concurrent enrollment.

375-3 Electromagnetic Fields. Electric and magnetic fields using vector analysis. Maxwell's equations, Laws of Coulomb, Gauss, Ampere, and Faraday. Concepts of energy and potential. Poisson and Laplace fields. Wave equation and plane waves. Prerequisite: Mathematics 251.

385-4 Electromechanical Energy Conversion. Principles of electromagnetic energy conversion and related circuitry. Magnetic circuits. Transformers. DC machines. Single phase and polyphase machines. Polyphase circuits. Lecture and laboratory. Prerequisite: 235 with a grade of C or better and concurrent enrollment in 336.

392-1 to 6 Electrical Engineering Cooperative Education. Supervised work experience in industry, government or in a professional organization. Students work with on-site supervisor and faculty adviser. Reports are required from the student and the employer. Hours do not count toward degree requirements. Mandatory Pass/Fail. Prerequisite: sophomore standing.

421-3 Introduction to Hardware Descriptive Languages. Fundamental concepts, techniques and tools for computer-aided design of simple digital systems. Modeling of digital systems using hardware descriptive languages, behavioral description and structural description. Realization of the design on FPGA-like chips. Simulation and testing. Prerequisite 327.

424-4 Design of Microprocessor-Based Systems. Microprocessor terminology. Design, construction, and programming of microprocessor-based systems. Lecture and laboratory. Cost of parts for microprocessor-based system, approximately \$80. Prerequisite: 427 or concurrent enrollment, or consent of instructor.

425-3 Computer-Aided Design of Digital VLSI Systems I. Principles of using CAD tools in designing digital VLSI systems: stick diagrams, design rules, and layout diagrams for CMOS technology. Design and implementation of custom VLSI integrated circuits. Projects. Prerequisite: 336, 345 and 427.

427-4 Structure of Digital Computers. Introduction to structure and design of digital computers: central processing unit, arithmetic unit, memory organization including cache and virtual memory concepts, input and output systems, interrupts, direct memory access, hardwired, and microprogrammed control units. Trends in computers. Lecture and laboratory. Prerequisite: 327.

428-4 Digital Hardware Design. Introduction to theoretical concepts and experimental design and construction of digital systems with a microprocessor as system controller. FPGA (Field Programmable Gate Arrays) or similar logic. Lecture and laboratory. Laboratory fee of \$10 to help defray cost of consumable items. Prerequisite: 427 or consent of instructor.

443-4 Electrical Engineering Design. Students select suitable project, define and design subsystems, define requirements of interfaces among subsystems, integrate subsystems into final design, and document, price, and schedule project. Lecture and laboratory. Prerequisite: senior standing in electrical engineering.

446-4 Electronic Circuit Design. Analysis and design of electronic circuits, both discrete and integrated. Computer-aided circuit design and analysis. Consideration of wideband, power, and tuned amplifiers; switching circuits; feedback; and oscillators. Design projects. Lecture and laboratory. Laboratory fee of \$10 to defray cost of consumable items. Prerequisite: 336, 345, and 355 or concurrent enrollment.

447-4 Electronic Devices. Physical mechanisms governing the operation of a wide variety of semiconductor devices. Applications of specific devices to illustrate performance characteristics. Device design related to terminal properties. Term paper on design. Lecture and laboratory. Prerequisite: 336 and 345.

448-4 Laser Electronics. Excitation and lasing in various liquid, solid, and gas lasers. Techniques and principles utilized in design of laser system. Lecture and laboratory. Prerequisite: 375.

456-3 Control Theory. Fundamentals and techniques for analysis and design of linear, dynamic systems: Laplace transformation, signal-flow graphs, state variable equations, stability conditions, time-domain analysis, frequency-domain analysis, root-locus method, and controller designs. Prerequisite: 336 and 355.

458-3 Communications Theory. Signal transmission through linear systems. Applications of Fourier transform in communications. Sampling theory. Digital coding of analog sources: pulse code, differential pulse code, and delta modulations. Data transmission through telephone channels. Amplitude and frequency modulations; signal-to-noise ratio. Prerequisite: 336 and 355.

459-3 Digital Control. Analysis and design of linear, discrete-data and digital control systems: Z-transformation, state variable equations, stability criteria, time-domain analysis, frequency-domain analysis, and digital controller designs. Prerequisite: 456 or concurrent enrollment.

462-3 Biomedical Instrumentation. (Same as Physiology 462.) Diagnostic and therapeutic modalities related to engineering. Cardiovascular, neural, sensory and respiratory instrumentation. Prerequisite: consent of instructor.

465-3 Instrumentation. Measurement systems for research and manufacturing. Instrument characteristics. Digital and analog techniques and devices in instrumentation. Transducers. Signal conditioners. Displays. Control devices. Statistics of measurement. Lecture and laboratory. Laboratory fee of \$10 to help defray cost of consumable items. Prerequisite: 336 and 345.

468-3 Digital Signal Processing. Discrete-time signals and systems; sampling; Z-transform; discrete Fourier transform; fast Fourier transform algorithms; digital filter design; digital filter realizations. Prerequisite: 355 and 336.

476-3 Introduction to Broadband Communication Systems. Digital transmission fundamentals. Satellite, microwave, video coding and optical transmission. Prerequisite: 355 and 375.

477-4 Electromagnetic Waves. Transmission-line analysis. Phasor diagrams. Smith chart. General eigen-wave analysis. Guided wave. Plane waves including optical waves. Oblique reflection and transmission. Non-reciprocal wave systems. Design of electromagnetic systems. Lecture and laboratory. Prerequisite: 375 or consent of instructor.

478-3 Digital Communication. Application of probability theory and random processes in digital communication systems. Behavior of digital communication systems in noise. Performance comparisons of digital modulation systems. Optimum signal detection. Entropy and channel coding. Prerequisite: 355.

479-3 Electromagnetic and Optical Measurements. Fundamental measurement techniques in electromagnetic wave systems and optical systems. Accurate measurements of microwave properties of materials, laser transmission reception, modulations, and holographs. Prerequisite: 375.

483-4 Power Electronics. Power semiconductor devices. Power converters. Solid-state control of electro-mechanical systems. Lecture and laboratory. Not for graduate credit. Prerequisite: 336, 345, and 385.

484-3 Computer-Aided Circuit Analysis. Network Topology. Nodal analysis of linear and nonlinear networks. Standard form of state equations of linear networks. Numerical solution of state equations. Sensitivity calculations. Prerequisite: 336.

486-3 Electric Energy Sources. Principles and utilization of nuclear, solar, and fossil-fuel generators. Direct energy-converters. Energy-storage devices. Cost of generating power. Prerequisite: 336 and 385, or consent of instructor.

487-4 Power Systems Analysis. Introduction to analysis of electric power systems. Modeling of power system components. Power system configuration. Per-unit quantities. Network analysis applied to power systems. Load flow. Lecture and laboratory. Prerequisite: 385.

488-3 Power Systems Engineering. Economic operation of power systems; symmetrical components; short circuit analysis; stability. Prerequisite: 487.

489-3 Electric Power Distribution. Design of primary and secondary distribution networks. Load characteristics. Voltage regulation. Metering. System protection. Technical and legal requirements in power distribution. Prerequisite: 487.

492-1 to 3 Special Studies in Electrical Engineering. Individual projects and problems selected by student or instructor. Open to seniors only. Not for graduate credit. Prerequisite: consent of instructor.

493-1 to 3 Special Topics in Electrical Engineering. Lectures on topics of special interest to students in various areas of electrical engineering. Designed to test new and experimental courses in electrical engineering. Prerequisite: consent of instructor.

495-4 (1,3) Electrical Engineering Design. (a) Development of preliminary design. Feasibility and cost-benefit analyses. Ethics and professionalism. Organization, identification of tasks, assignment of tasks to team members and coordination. Development of final proposal. Not for graduate credit. Prerequisite: Senior standing in electrical engineering, (b) Development of final design. Scheduling and cost estimating. Documentation of all stages of design. Construction of final design (if project warrants). Evaluation of final design. Written, oral and poster presentation of final design. Not for graduate credit. Prerequisite: 495a.

Electronics Management (ELM)

100-3 Introduction to Electronics. This course is an introduction to the field of electronics technology designed for students who are not majoring in Electronics Management. It examines the role of the electronics technician and teaches the fundamental concepts of electronics.

101-3 DC-AC Circuit Analysis. This course covers the theory and application of passive DC and AC circuits presented in a comprehensive manner using qualitative and quantitative methods. Theoretical topics such as Ohm's Law and Kirchhoff's Law are applied to analyze DC and AC circuits. Prerequisite: concurrent enrollment in 111, equivalent, or consent of instructor

102-3 Electronic Circuits Theory. This course presents the use and analysis of active and passive devices in electronic circuits. Semiconductor diodes, bipolar junction transistors and field effect transistors are discussed in circuit applications which include power supplies, amplifiers and switching circuits. Prerequisite: 101 and concurrent enrollment in 112 and 121 or consent of department.

111-3 DC-AC Circuit Analysis Laboratory. This course introduces fundamental skills required by the electronics technician. The fundamental laws and theories of passive DC-AC circuits will be verified through experimentation. Hand tools and electronic test equipment will be used to construct, analyze and troubleshoot electronic circuits. The measurement and analysis of electronic circuits will require the use of the oscilloscope, multimeter, power supply and signal generator. Six contact hours. Prerequisite: concurrent enrollment in 101 or consent of department

112-3 Electronics Circuits Laboratory. This course introduces the fundamental operation, application and troubleshooting techniques associated with semiconductor devices. Formulas and theories associated with the operation of semiconductor circuits will be verified using the oscilloscope, multimeter, power supply and signal generator. Experiments demonstrate the application of diode, transistor amplifier and transistor switching circuits. Six contact hours. Prerequisite: 111 and concurrent enrollment in 102 or consent of department.

121-3 Advanced Analysis and Digital Fundamentals. This course is divided into two distinct subject areas. The first subject area includes advanced laws and theories of DC-AC circuits, circuit theorems and AC circuit analysis using complex numbers. The second subject area encompasses digital fundamentals which include numbering systems, logic gates, combination logic, Boolean algebra, multivibrator circuits and their applications. Prerequisite: concurrent enrollment in 102 or consent of department.

199-1 to 10 Individual Study. This course provides the first-year student with the opportunity to develop a special program of study to fit a particular need not met by other offerings. Enrollment provides access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program supervisor and department chair.

201-3 Digital Circuits Theory. This course presents the concepts of digital circuits that make up systems such as numeric control, computers and communications networks. The application and analysis of counters, registers, arithmetic logic circuits, analog conversion circuits, memory circuits and basic microprocessor systems are presented. Prerequisite: 102 and 121 or consent of the department.

202-3 Telemetry and Industrial Circuits Theory. This course introduces the principles of acquisition, transmission and application of measurements and data in industrial and commercial systems. The course also introduces the theory and application of solid state and electro-mechanical devices used in industrial control. The principles of the operation of sequential and analog process control are introduced. Prerequisite: 221 and concurrent enrollment in 212 or consent of department.

211-3 Digital Circuits Laboratory. This course provides practical experience assembling, testing, and troubleshooting counters, registers, arithmetic logic circuits, analog conversion circuits, memory circuits and basic microprocessor systems. An emphasis is placed on the use of data books, safety and troubleshooting. Six contact hours. Prerequisite: 112 and 121 or consent of department.

212-3 Telemetry and Industrial Circuits Laboratory. This course demonstrates the principles of measurement, transmission and utilization of data found in industrial systems. Experiments and projects develop skills in assembling, testing and trouble-shooting of transducer, telemetry and power electronic circuits. An emphasis is placed on the safe procedures for test and measurement of high power and control systems found in the industrial environment. Six contact hours. Prerequisite: 112 and concurrent enrollment in 202 or consent of department.

221-3 Electronic Circuit Analysis. This course analyzes electronic systems through the study of single stage transistor, multiple stage transistor and operational amplifiers. Simplified modeling techniques are applied to compute impedance, gain and frequency response of linear circuits. The course also investigates the effect of positive and negative feedback on circuit performance and characteristics. Operational amplifier applications

of filtering, analog computation and waveshaping are covered. Prerequisite: 102 and 121 or consent of department.

223-1 to 3 Electronics Certification Test Preparation. This course will provide the student an opportunity to prepare for industry recognized certification tests. This is an individualized self-paced course. Certification tests are in the areas of communications technology, biomedical technology, industrial technology and computer technology. The student will be responsible for all fees associated with taking the certification tests and purchasing reference materials that are not provided by the program. Prerequisite: consent of department.

224-3 Computer Systems Applications. This course introduces students to microprocessor and microcomputer systems. Included is an introductory presentation of computer operating systems, basic hardware components, microcomputer peripherals, and local area networks. Prerequisite: consent of department.

258-1 to 30 Electronics Work Experience. Credit granted for prior job skills, management-worker relations and supervisory experience while employed in the electronics industry. Credit will be established by departmental evaluation.

259-1 to 60 Electronics Occupational Education. A designation for credit granted for past occupational educational experiences related to electronics management. Credit will be established by departmental evaluation.

298-1 Multicultural Applied Experience. (Multicultural Applied Experience Course) An applied experience, service-oriented credit in American diversity involving a group different from the student who elects the credit. Difference can be manifested by things such as age, gender, ethnicity, nationality, political affiliation, race, or class. The student can sign up for the one credit experience in the same semester he or she fulfills the multicultural requirement for the University Core Curriculum, or the credit can be coordinated with a particular Core Course on American diversity, although neither is a requirement. Students should consult the respective department for course specifications regarding grading, work requirements and supervision. Prerequisite: Approval of the site representative, faculty supervisor and department chair.

299-1 to 16 Individual Study. This course provides the student with the opportunity to develop a special program of study to fit a particular need not met by other offerings. Enrollment provides access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program supervisor and department chair.

301-3 Introduction to Biomedical Instrumentation. This course covers a broad range of material that will introduce the student to maintenance, calibration, safe application and management of biomedical equipment. This course will also provide basic knowledge about the theory of operation, terminology and the underlying principles associated with biomedical equipment. Prerequisite: Allied Health Careers Specialties 105 and 141 or equivalent or consent of department.

302-3 Optical Electronics. This course is designed to provide the theory and practice necessary to introduce the student to the broad fields of fiber optics and optoelectronics. Fiber optics is the optical technology concerned with the transmission of radiant power through transparent fibers and optoelectronics pertains to devices that emit, modify, or respond to optical radiation. Applications of fiber optics and optoelectronics to communications, imaging and sensing will be emphasized, with a concentration on communications applications. Prerequisite: departmental approval.

303-3 Microcomputer Construction and Troubleshooting. The student will be able to construct a microprocessor based system, make it operational and develop techniques used in software/hardware troubleshooting. Three credit hours. Prerequisite: 202 or 212 or consent of department and concurrent enrollment in 309 or consent of instructor.

304-3 Communication Systems. The non-calculus based theory of circuits used in modern AF, Video and RF communication systems; applicable to PA systems through satellite communications. Modulation, demodulation, multiplexing and conversion of both digital and analog signals will be covered. Receivers, transmitters and various interface devices will be studied. Lecture three credit hours. Prerequisite: consent of department and/or consent of instructor.

305-3 Microcomputer Maintenance. This course will provide the theory and practice necessary for the student to be able to diagnose and repair personal computers and peripheral devices to the component level using electronic test equipment. In addition, the student will be able to use interpersonal and communication skills in order to identify and satisfy customer needs. Three hour lecture/lab. Prerequisite: consent of department and/or consent of instructor.

306-3 Computer Aided Drafting and Design for Electronics. The theory and practice of computer-aided drawing and design encountered in the electronics industry. Course develops the competencies and skills necessary to produce the graphic designs encountered in the field. Application of computers to the synthesis of designs to practical realizations. Prerequisite: consent of department and/or consent of instructor.

307-3 Advanced Industrial Electronics. The theory and application of input and output field devices involved in data acquisition and computer based process control. Selection and application of computer based control equipment as it pertains to automatic monitoring, control and production. Primarily focused toward imbedded microcomputer control systems and commercial programmable controllers. Must be taken concurrently with 317. Prerequisite: 201 and 211, concurrent enrollment in 317, or consent of instructor.

309-3 Microcomputer Programming. This course is designed to familiarize the student with several microprocessor architectures and instruction sets with emphasis on the Intel series of processors. Microcomputer tools for programming and debugging will also be presented. The student will program in both machine language and assembly language with emphasis on programming techniques. Prerequisite: departmental approval and/or consent of instructor.

311-3 Electronics Biomedical Instrumentation Laboratory. This course provides hands-on experience with common biomedical instrumentation. The student will perform exercises that will teach maintenance, calibration safe application and management of biomedical instrumentation. This course will also provide basic

knowledge about the theory of operation, terminology and the underlying principles associated with biomedical equipment. Prerequisite: concurrent or prior enrollment in 301 or consent of department and/or consent of instructor.

312-3 Optical Electronics Laboratory. This laboratory is designed to reinforce the concepts of fiber optics, laser and light physics. Emphasis will be placed on the integration of laser, fiber optic and communication principles with electronics. Prerequisite: concurrent enrollment in 302 or consent of instructor.

313-3 Microcomputer Construction and Troubleshooting Laboratory. This laboratory is designed to reinforce the concepts of microcomputer construction, operation, troubleshooting, programming and interfacing through actual practice. Prerequisite: prior or concurrent enrollment in 303 and 309 or consent of instructor.

314-3 Communication Systems Laboratory. Designed to reinforce the concepts of modern AF, video and RF communication systems. AM, FM, SSB, PCM and complex modulation AF signals will be investigated in a laboratory environment. Prerequisite: concurrent enrollment in 304.

317-3 Advanced Industrial Electronics Laboratory. A laboratory course allowing hands-on experience with circuitry involved in data acquisition and compute based process control. Emphasis on the design and testing of signal conditioning circuitry, writing software, and programming imbedded microcomputer control systems and commercial programmable controllers. This is a three credit hour laboratory course to be taken concurrently with 307. Prerequisite: 201 and 211, concurrent enrollment in 307, or consent of instructor.

319-1 to 15 Electronic Occupations Internship. Students will be assigned to a University approved program to engage in activities related to the electronics management program and the student's career objectives. The student will perform duties as assigned by the work supervisor and the internship coordinator. Internships may be performed in one of the following areas: (a) Biomedical Equipment Technology, (b) Communications Technology, (c) Computer Technology, or (d) Industrial Technology. Mandatory Pass/Fail. Prerequisite: consent of instructor.

320-1 to 12 Electronics Occupations Cooperative Education. Each student will participate in a departmentally approved cooperative education program that includes formal instruction, training and/or career-related work experience. Students receive a salary or wages and engage in pre-arranged assignments related to their academic program and career objectives. Department faculty evaluation, cooperative agency student performance evaluations and student reports are required. Hours and credit to be individually arranged. Mandatory Pass/Fail. Prerequisite: consent of instructor.

337-3 Power Distribution and Motor Control. The theory and application of electrical power distribution systems from plant substation to branch circuits. Emphasis on safety in working with these systems. Fundamental operation and application of various types of electric motors and transformers. The theory and application of electronic and electromechanical control systems for motors. Prerequisite: consent of department and/or consent of instructor.

340-3 Application of Solid State Devices. A technical and managerial approach to the practical application of discrete solid state devices and linear integrated circuits. The characteristics of these devices will be reviewed to assist the student in understanding their selection and application process. Prerequisite: Electronics Management major or consent of department.

341-3 Digital Circuit Applications. Applications of digital electronic devices and circuits in business and industry. Geared to the needs of the technical manager, this course builds upon the student's knowledge of basic electronics theory. Basic principles of subsystems are reviewed to assist the student in understanding their selection and application to business/industrial settings. Prerequisite: electronics management major or consent of department.

342-3 Microcomputer Applications. This course uses a microcomputer approach from the standpoint of the technical manager. The primary emphasis of this course is on the practical uses of microcomputer systems in business and industry. Basic characteristics and principles of microcomputers will be reviewed to provide an understanding of applications in specific business and industrial settings. Prerequisite: 341 or consent of department.

343-3 Microcomputer Application Laboratory. Laboratory experiences selected to reinforce microcomputer characteristics and practical applications in business and industry. Students sample applications of microcomputer systems on an operational microprocessor. Included is the theory of operation, basic hardware component blocks, software operating system, program development and entry. Prerequisite: 342 or concurrent enrollment in 342; may be independent study.

350-1 to 32 Technical Career Subjects. This course provides the student with in-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions and health service occupations offered through various workshops, special short courses, and seminars. Hours and credits to be individually arranged. This course may be classified as independent study. Prerequisite: consent of instructor.

365-3 Electronics Industry Data Applications. The application of statistical data within the electronics industry to include an introduction to the basic statistical treatment of data, data sources and the design of statistical studies. Emphasis in on the principles and techniques of data analysis, synthesis, and utilization as applied to decision making in the electronics field. Student will gain experience in applying data to decision making through case studies and class projects. Prerequisite: Mathematics 108 or consent of department.

385-3 Fiscal Aspects of Electronics Management. An introduction to the types of fiscal problems encountered in the electronics industry. The course will address the diverse sizes and types of business within the field and will include an introduction to the accounting process. Emphasis will be given to financial management systems, financial analysis tools, cash flow management and budgeting procedures. Prerequisite: electronics management major or consent of department.

387-3 Electronics Industry Labor-Management relations. A study of economic situations that affect labor-management relations in electronics-related career fields. Study will include the evolution of labor relations in the American electronics industry and interactive differences in labor-management relations from a global perspective. Laws that are common to both union and non-union employees will be emphasized. Prerequisite: electronics management major or consent of department.

388-3 Legal Aspects of Electronics. An introduction to the types of legal problems encountered in the electronics industry to include American legal heritage and legal rights. The course will emphasize the nature and classification of contracts, warranties, product liabilities, consumer protection and applicable employment laws. Prerequisite: electronics management major or consent of department.

404-3 Communication Systems Management. Coverage of a broad range of material that will introduce the student to maintenance, evaluation, installation, troubleshooting and management of communications equipment, with an emphasis on computer networks. This course will also provide advanced knowledge about the theory of operation, terminology and the underlying principles associated with the transmission of voice, data and video information through telephone, satellite and cellular radio communications equipment. Prerequisite: consent of department and/or consent of the instructor.

414-3 Communication Systems Management Laboratory. Coverage of a broad range of material that will allow the student to have hands-on experience with the maintenance, evaluation, installation, troubleshooting and management of local area networks (LANs) and telephone, satellite and cellular radio communications equipment. Prerequisite: consent of department and/or consent of instructor and concurrent enrollment in 404.

420-1 to 12 Electronics Management Cooperative Education. Students may participate in a departmentally approved cooperative education program that includes formal instruction, training and/or career-related work experience. Students will receive a salary or wages and engage in pre-arranged assignments related to their academic program and career objectives. Department faculty evaluation, cooperative agency student performance evaluations and student reports are required. Hours and credit to be individually arranged. Mandatory Pass/Fail. Prerequisite: consent of instructor.

441-3 Career Development for Electronics Managers. A study of elements to consider when seeking employment in an electronics career field. These elements include personal inventories and resumes, placement service and employment agencies, interviewing techniques, letters of application, references and employment testing. Emphasis will be placed on the roles of mentoring, membership in professional organizations, continuing education and other opportunities for professional growth throughout a career in the electronics industry. Each student will develop a portfolio including personal and professional information related to individual career goals. Not for graduate credit. Prerequisite: electronics management major or consent of department.

451-3 Current Trends in Electronics Management. This course is designed to familiarize the student with current managerial trends that support the installation, evaluation, repair and maintenance of electronic systems. Topics may include but are not limited to economic justification and cost control, quality control and program improvement, compliance with codes, equipment control and evaluation and input to administration. Not for graduate credit. Prerequisite: senior status in electronics management or consent of department.

Engineering, College (ENGR)

Safety glasses, a hand-held scientific calculator and textbooks are required for all engineering students.

102-2 Computer-Aided Engineering Drawing. Manual sketching and computer aided engineering drawings techniques. Lettering; orthographic projections, isometric projection, oblique projections, auxiliary views, dimensioning, sectioning, working drawings.

222-4 (2,2) Computational Methods for Engineers and Technologists. Introduces the student to the use of digital computers in the solution of technical problems that are specifically designed for the engineering and technology student. Problem analysis, flowcharting, coding, diagnostics, execution, and solution verification are discussed. (a) Programs written in FORTRAN. (b) Programs written in C language. Prerequisite: Mathematics 111.

260-5 (2,3) Mechanics of Rigid Bodies. (a) Principles of statics; force systems; equilibrium of particles and rigid bodies; trusses, frames and machines, centroids; friction; moments of inertia of areas. Prerequisite: 102 and Mathematics 150. (b) Principles of dynamics; mass moment of inertia; kinematics and kinetics of particles and rigid bodies; vibrations. Prerequisite: 260a or equivalent.

300-3 Engineering Thermodynamics. Study of the basic principles of thermodynamics. Engineering analysis of physical systems based on the first and second laws. Properties of pure substance (ideal gas behavior, non-ideal gas behavior, and equations of state.) Mixtures of ideal gases. Introduction to cycle analysis. Prerequisite: Mathematics 251, Physics 205a,b.

3011-3 Humans and Their Environment. (University Core Curriculum) An introduction to the study of the relationship between humans, resource consumption, pollution and the resulting environment. The effects of current human pollution and resource consumption on the environmental quality of the future. The interrelation of human population resource consumption and pollution. Methods of minimizing resource consumption and human pollution through both technological controls and changes in human behavior. Prerequisite: high school chemistry or equivalent.

3031-3 The Role of Energy in Society. (University Core Curriculum) Lectures, discussions and class projects directed at understanding the role of energy, power and related concepts in society; in the past, the present

and the future. Review of current energy resources and use patterns, as well as projections for new energy conservation techniques and the development of alternative energy technology. An overview of worldwide energy needs, seeking to identify future limits on energy use attributable to environmental, economic, political and other technological and evolutionary constraints. Prerequisite: satisfactory completion of three hours of University Core Curriculum science requirements.

311-3 Mechanics of Deformable Bodies. Introduction to the mechanics of deformable bodies. Forces and deformations. Torsion. Stresses in beams. Deflections of beams. Statically indeterminate beams. Columns. Laboratory supply fee: \$3. Prerequisite: 260a and concurrent enrollment in or completion of 222a and Mathematics 251.

312-3 Materials Science Fundamentals. Sub-microscopic structure of solids, including electronic states, atomic and molecular arrangement, structural imperfections and atomic diffusion, and their relationship to macroscopic properties; physical properties of semiconductors; metallic, organic and ceramic materials and their mechanical properties. Laboratory supply fee, \$5. Prerequisite: Physics 205a,b Chemistry 200 and 201, Mathematics 250.

313-3 Fluid Mechanics. A broad introduction to the concepts and principles of fluid statics, kinematics, and dynamics. The fundamental laws for fluid motion in the form of Euler's, Bernoulli's, impulse-momentum and work-energy equations. Dimensional analysis and dynamic similitude. Resistance to flow; deformation drag, surface drag, form drag. Introduction to compressible fluid flow. Laboratory supply fee, \$3. Prerequisite: 260b and concurrent enrollment in or completion of 222a and Mathematics 251.

335-3 Electric Circuits. Foundation course in electric circuits. Basic laws and concepts of linear circuits. Analysis of AC and DC circuits by mesh and nodal methods, Thevenin's and Norton's theorems, superposition principle, and phasor notation. Transients. Prerequisite: Mathematics 250.

345-3 Electronics. Functional electronics and basic signal processing. Characteristics and typical applications of analog and digital electronic modules. Operational amplifiers. Fundamentals of transistors. Use of basic instruments. Lecture and laboratory. Laboratory fee of \$10 to help defray cost of consumable items. Prerequisite: 335.

351-3 Numerical Methods in Engineering. Overview of numerical procedures such as root finding, curve fitting, integration, solutions of simultaneous equations, and solutions of ordinary differential equations. Emphasis will be on applications of these techniques to problems in engineering mechanics, and civil and mechanical engineering. Prerequisite: 102, 222a and concurrent enrollment or completion of Mathematics 305.

361-2 Engineering Economics in Design. Procedures for evaluating the relative economic merits of engineering projects and designs. Use of these procedures permits comparing alternate engineering estimates, evaluate engineering effectiveness, and proceed toward decision making based on economic and engineering optimization. Professional engineering examinations include these course materials. Prerequisite: Mathematics 111 or equivalent.

385-3 Electromechanical Energy Conversion. Principles of electromechanical energy-conversion and related circuitry. Magnetic circuits. Transformers. DC machines. Single-phase and polyphase machines. Polyphase circuits. Prerequisite: 335.

400-1 Engineering Professionalism and Ethics. The role of the engineer as a professional in society and in the corporate structure. Engineering registration. The basis and function of Engineering Codes of Ethics. Major ethical/philosophical value systems in our country. Ethics applied to specific engineering case studies. Not for graduate credit. Prerequisite: senior standing in the College of Engineering.

455-3 Engineering Geology. (See Geology 455.)

Engineering Technology (ET)

A suitable calculator and textbooks are required for most of the following courses.

103-3 Engineering Drawing I. Principles and practices of engineering drawing. Orthographic (multiview) projection; sections and conventions; the spatial relationship of points, lines, and planes; and revolution.

104-3 Engineering Drawing II. Principles and practices of engineering drawing. Representation of mechanical components, dimensioning, tolerancing, and mechanical drawing symbols. Introduction to computer-aided drawing systems with applications to both micro-computer and mini-computer systems. Prerequisite: 103.

202-3 Structural Detailing. Principles and practices of engineering drawing as applied to structural design with emphasis on reinforced concrete and structural steel drawings. Drawing supplies required, cost \$8. Prerequisite: 103.

209-3 Manufacturing Process Laboratory. (Same as Industrial Technology 209) Laboratory experiments to familiarize the student with the theory and operation of manufacturing processes. Laboratory. Prerequisite: IT 208 or consent of instructor.

236-2 Electrical Instrumentation. Theory and use of D.C. and A.C. instruments; measurement and error, units, standards, meters, bridges, oscilloscopes, electronic instruments, instruments for generation and analysis of waveforms, counters, and transducers. Laboratory. Prerequisite: Mathematics 111.

238-4 Digital Fundamentals. Introduction to fundamental concepts of digital systems, logic gates, simulation of logic gates, combinational logic design, Karnaugh maps, number systems, flip-flops, sequential circuits, digital circuit fault analysis, and comparison of logic families. Laboratory. Prerequisite: Mathematics 111.

245-8 (4,4) Electrical Systems for Industry. (a) Electrical symbols and schematics, resistance, Ohm's Law, capacitance, inductance, Kirchhoff's Law, meters, A.C. fundamentals, transformers, power factor, and safety. Laboratory. Prerequisite: Mathematics 111. (b) Introduction to electronics: laboratory practices, oscilloscopes,

- meters, components, power supplies, amplifiers, and characteristics of semiconductor devices. Laboratory. Prerequisite: Mathematics 111.
- 260-6 (3,3) Principles of Mechanics.** (a) Statics. Concepts of force systems, moments, and equilibrium of rigid bodies, analysis of trusses and frames, determination of centroids, center of gravity, and moments of inertia, calculation of shear and moment diagrams in beams. Prerequisite: Mathematics 150 or concurrent enrollment. (b) Dynamics. Friction; particles and rigid bodies in translation, rotation, and plane motion; relative motion; impulse and momentum; work and energy. Prerequisite: 260a, Mathematics 150.
- 263-4 Basic Surveying.** Use and care of surveying instruments; principles of surveying practice and computation. Laboratory. Prerequisite: 103, Mathematics 111.
- 304-8 (4,4) Electrical Circuits.** (a) Solutions to D.C. steady-state networks by branch, equivalent circuit, loop circuit, and node voltage methods. Study of network theorems. Extension of these topics to A.C. steady-state by use of the phasor transform. Laboratory. Prerequisite: 245a, Mathematics 150 or concurrent enrollment. (b) Further topics in A.C. circuits; frequency response, resonance, filters, transformers and magnetic coupling, complex power, and dependent sources. Transient response by the classical solution of differential equations and by Laplace transform methods. Laboratory. Prerequisite: 304a, Engineering 222, Mathematics 250 or concurrent enrollment.
- 310-6 (3,3) Heavy Construction.** (a) The fundamental elements of heavy construction methods and equipment. Prerequisite: 260a or consent of instructor. (b) Construction planning, estimating, and management procedures and techniques. Civil engineer's scale required. Prerequisite: 310a.
- 311-3 Strength of Materials.** Stress and strain; torsion, bending, and combined stresses; beam deflections; behavior of columns. Laboratory. Prerequisite: 260a, Engineering 222 or concurrent enrollment.
- 312-3 Materials Fundamentals for Design and Manufacturing.** Applications and characteristics of metallic and nonmetallic materials used in design and manufacturing. Characteristics and properties of materials used in engineering applications. Prerequisite: Physics 203a,b; 253a,b.
- 313-3 Elementary Heat Power.** First and second law analysis, properties of systems, fluid phases and mixtures. Mass and energy balances of steady state systems. Psychrometrics, power and refrigeration cycles, and fundamentals of heat transfer. Prerequisite: Mathematics 150.
- 314-6 (3,3) Soil Mechanics.** (a) Laboratory determination of the basic properties of soils; components of soil surveys; engineering soil classifications; fundamental study of soil properties. Laboratory. Laboratory notebook required, costing approximately \$4. (b) Soil water and seepage; frost action in soils; soil stabilization; stress distribution in soils and introduction to foundation design. Prerequisite: 260a, 314a.
- 315-2 Elementary Structural Analysis.** Applications of the principles of mechanics to the determination of forces and deflections of statically determinate structures; approximate methods of determining member forces in indeterminate frames; study of various types of structures and loading conditions. Prerequisite: 260a, Engineering 222 or concurrent enrollment.
- 317-3 Fluid Mechanics.** Fundamentals of fluid statics, basic fluid flow concepts for idealized fluids, flow networks, and introduction to viscous fluids. Prerequisite: Mathematics 260b.
- 318-3 Hydraulics and Pneumatics.** Viscous flow in closed conduits, basic hydraulic machinery, and fluid power systems. Laboratory. Prerequisite: 317.
- 319-3 Municipal Hydraulics.** Flow measuring devices; collection, storage, and distribution of water; collection and transportation of sewage; pumps and pumping. Laboratory. Prerequisite: 317.
- 321-3 Instrumentation and Controls.** Analog and digital signal conditioning; thermal, mechanical, and optical transducers; electrical pneumatic and hydraulic actuators; and control loop dynamics. Laboratory. Prerequisite: 245a.
- 332-8 (4,4) Electromagnetic Principles and Devices.** (a) Introduction to D.C. and A.C. machinery. Theory and operating characteristics of D.C. generators and D.C. motors. Laboratory. Prerequisite: 304a or concurrent enrollment. (b) Theory and operating characteristics of polyphase and single-phase A.C. motors. Special applications of A.C. and D.C. motors. Laboratory. Prerequisite: 332a, 304a or concurrent enrollment.
- 342-2 Technology Design.** A design project on any technical subject selected by the student with advice from the instructor. Individual or group effort required to develop functional design. Report writing and oral presentation required. Prerequisite: 311, 312, 313, 318.
- 361-3 Project Surveying.** Surveying process for civil engineering projects; easements; precise surveying; related computations. Laboratory. Prerequisite: 263.
- 362-3 Land Surveying.** U.S. Public Land System and boundary surveys; survey laws; legal descriptions; title search; related computations; subdivision development. Laboratory. Prerequisite: 263.
- 363-3 Control Surveying.** Topographic surveying; geodesy; route surveying; construction stakeout; related computations. Laboratory. Prerequisite: 263.
- 364-7 (4,3) Highway Engineering Technology.** (a) Highway surveys, plans and computations. Highway design, drainage, roadside development and subgrade structure. Study of types of base courses, pavements, and surfaces. Highway construction and maintenance. Laboratory. Prerequisite: 263 or consent of instructor. (b) Highway administration, planning, economics, and finances. Traffic engineering. Introduction to railroad and airport design. Prerequisite: 364a.
- 365-3 Water Treatment and Sanitation.** Introduction, description, and design of potable water and wastewater facilities. Chemical coagulation, sedimentation, disinfection, and hardness removal of water. Sanitation measures and control of communicable diseases. Prerequisite: senior standing in civil engineering technology or consent of instructor.
- 390-3 Cost Estimating.** (Same as Industrial Technology 390.) Study of the techniques of cost estimation for products, processes, equipment, projects, and systems. Prerequisite: Mathematics 111.

- 392-2 (1,1) Engineering Technology Co-op.** Supervised work experience in Engineering Technology industry. Prerequisite: junior standing and consent of instructor. Mandatory Pass/Fail.
- 401-3 Refrigeration and Air Conditioning.** Applications of thermodynamics and heat flow to air conditioning systems. Heating and cooling load analysis. Principles of human comfort. Discussion of various refrigeration and air conditioning cycles and their application to laboratory simulators. Laboratory. Prerequisite: 313.
- 403-8 (4,4) Electronics Technology. (a)** Fundamental theory and operation of semiconductor diodes and bipolar transistors, incremental models for transistors, biasing, stability, and feedback of single and multistage amplifiers. Parameters and applications of field-effect transistors, opto-electronic devices, thyristors, unijunction transistors and amorphous semi-conductors. Laboratory. **(b)** Parameters and applications of operational amplifiers, linear integrated circuits, monolithic voltage regulators, and digital integrated circuits. Laboratory. Must be taken in a,b sequence. Prerequisite: 304b.
- 404-3 Machine Design Technology.** Strength and safety considerations in design of machine parts. Fatigue and stress concentrations, bearings, brakes, clutches, and springs. Applications of the principles of mechanics to problems of design and development, mechanisms. Laboratory. Not for graduate credit. Prerequisite: 260a, 311.
- 408-3 Computer Assisted Drawing and Design.** Theory and practice of computer graphics as applied to computer assisted design. Use of programming and commercial programs to assist in mechanical engineering technology design projects. Not for graduate credit. Prerequisite: 104, 260a, 313, 317, Engineering 222, and senior standing.
- 411-3 Legal Aspects of Surveying.** Topics covered include common and statute law; unwritten rights in land and their relationship to land surveying; restoration of lost corners; principles controlling multiple corners; rules of evidence to include classification of evidence, burden of proof, and weight of classes of evidence; and rights, duties, and liability of the professional land surveyor. Not for graduate credit. Prerequisite: 362.
- 412-3 Survey Design and Land Development.** Subdivision and land development principles, methods, and procedures, including laws relating to subdivision and land development. Scope will include rural and urban subdivisions, industrial parks, and major recreational developments. Laboratory. Not for graduate credit. Prerequisite: 263.
- 413-4 Field Survey Problems.** Perform extensive field projects in the areas of engineering, hydrographic, land and control surveying. To be held at Crab Orchard National Wildlife Refuge. Course must be taken concurrently with 414. Prerequisite: 263 and one of 361, 362, or 363.
- 414-2 Field Project Planning and Computations.** Planning, organization, computations, and drafting of field survey projects including the needed mapping utilizing calculators, computers, and CAD. This course must be taken concurrently with 413. Prerequisite: 263 and one of 361, 362, or 363.
- 415-4 Elementary Structural Design.** Introduction to structural properties of steel and reinforced concrete. Design of basic steel elements: tension members, beams, columns, and connections. Basic design of reinforced concrete elements: beams, columns, and footings. Use of AISC and ACI codes. Prerequisite: 202, 311 (or concurrent enrollment), 315.
- 424-6 (3, 3) Power Systems Technology. (a)** Fundamentals of basic power plant operation, economics and equipment. Advanced Rankine cycles and cogeneration. Fuel classification and combustion principles. Alternative energy sources and conversion. Students work concurrently on group design projects emphasizing written and oral deliverables. Prerequisite: 311, 312, 313, 317, 318. **(b)** Alternate energy systems, e.g., wind power, solar energy, geothermal energy, biomass. Extension of 424a with heavier emphasis on optimization of design. Prerequisite: 424a.
- 426-5 (3,2) Photogrammetry. (a)** Cameras and photography; flight planning; mathematical principles of vertical and tilted aerial photographs; ground control methods; extension of control; stereoscopy and parallax; basic instruments, stereo plotters, and latest developments. Laboratory. Prerequisite: 263 or consent of instructor. **(b)** Rectification of tilted photographs; stereoscopic plotting instruments; principles and use of oblique photography; analytic photogrammetry and new concepts. Laboratory. Prerequisite: 426a or consent of instructor.
- 437-8 (4,4) Communications Systems Technology. (a)** Theory and applications of radio frequency transmission lines, waveguides, optical fibers, wave propagation, and antennas. Laboratory. Prerequisite: 304b. **(b)** Theory and applications of analog and digital communications systems. Laboratory. Prerequisite: 403a, 437a.
- 438-8 (4,4) Continuous and Digital Control Systems. (a)** Fundamentals of continuous control systems; equation of electrical, hydraulic and thermal systems; application of Laplace transforms, transfer functions, block diagrams, and flow graphs. Computer implemented graphical analysis and design methods: root locus, frequency response. Nyquist diagrams and compensator design. Continuous systems laboratory. Prerequisite: 304b. **(b)** Fundamentals of digital control systems, Stepper motors, digital data acquisition and interface components, Fourier transforms, Z transforms, and applications of fast Fourier transform. Digital control laboratory. Prerequisite: 438a.
- 439-4 Microprocessor Applications and Hardware.** A study of microprocessor applications and hardware based on microprocessor manufacturer's literature. System configuration, hardware, requirements, typical instruction set, programming, input/output techniques, interfaces, and peripheral devices. Prerequisite: 238.
- 445-3 Computer-Aided Manufacturing.** (Same as Industrial Technology 445.) Introduction to the use of computers in the manufacturing of products. Includes the study of direct and computer numerical control of machine tools as well as interaction with process planning, inventory control and quality control. Laboratory. Prerequisite: Engineering Technology 103 or Industrial Technology 105, Industrial Technology 208 or Engineering Technology 209, and computer programming.
- 455-3 Industrial Robotics.** (Same as Industrial Technology 455.) Study of industrial robots and their applications; pendant and numerical programming of robots. Robotics design including tactile and visual sensors.

Technical and psychological problems of justification, installation, and management of robotic systems. Prerequisite: 445.

492-1 to 6 Special Problems in Industry and Technology. Special opportunity for students to obtain assistance and guidance in the investigation and solution of selected technical problems. Not for graduate credit. Prerequisite: consent of instructor.

English (ENGL)

101-3 English Composition I. (University Core Curriculum) The first course in the two-course sequence of composition courses required of all students in the University. It is designed to give students practice and experience in writing and to help students write better and with greater confidence and enthusiasm. It teaches students the processes of writing, the final production of a text, and the strategies they need to write in different contexts and to produce texts which are appropriate to varying contexts. A minimum grade of C is required.

102-3 English Composition II. (University Core Curriculum) The second course in the two-course sequence of composition courses required of all students in the University. Using culturally diverse reading materials, the course focuses on the kinds of writing students will do in the University and in the world outside the University. The emphasis is on helping students understand the purpose of research, develop methods of research (using both primary and secondary sources), and report their findings in the appropriate form. Prerequisite: English 101 or equivalent with a minimum grade of C or better.

119-3 Introduction to Creative Writing. Practice in writing poetry and fiction. Prerequisite: 102.

120-3 Freshman Honors Composition. (University Core Curriculum) This course fulfills the Foundation Skills composition requirement. Prerequisite: top ten percent of the English section of ACT or the qualifying score on the CLEP test. Students will write critical essays on important books in the following categories: autobiography; politics; fiction; eyewitness reporting; and an intellectual discipline such as philosophy or science.

121-3 The Western Literary Tradition. (University Core Curriculum) The course offers a critical introduction to some of the most influential and representative work in the Western literary tradition. Emphasis is on the interconnections between literature and the philosophical and social thought that has helped to shape Western culture.

201-3 Introduction to Drama. Students will read and discuss plays of different types and periods. Prerequisite: 101 and 102; or 120; or equivalent.

202-3 Introduction to Poetry. Students will read and discuss poems of different types and periods. Prerequisite: 101 and 102; or 120; or equivalent.

203-3 Film as Literary Art. (University Core Curriculum) This course proposes to examine the influential role literature has on the cinematic tradition both in the past and present. It intends to emphasize the artistic and visual debt cinema owes to literature by concentrating on major achievements and analyzing them accordingly.

204-3 Literary Perspective on the Modern World. (University Core Curriculum) The course offers a critical introduction to literary works that convey the complexity and challenge of the social life in the Twentieth Century, using a set of representative topics as focal points: culture and community; gender and ethnicity; war and politics; and science and technology. Course may be taken as a sequence to 121, but 121 is not a prerequisite.

205-3 The American Mosaic in Literature. (University Core Curriculum) The course offers a reading and analysis of narratives of cross-cultural contact through representative topics: the first encounters between native Americans and Europeans; captivity, slavery and escape; immigration and city life; and cultures and families in transition. Emphasis is upon the various fictional and non-fictional literary forms in which the American pluralistic experience has been expressed.

209-3 Introduction to the Forms of Literature. Poetry, drama, and fiction. Statement and illustration of the techniques of the three genres over the range of American and English literature. Prerequisite: 101 and 102; or 120; or equivalent.

210-3 Introduction to Fiction. Students will read and discuss a variety of American and European short stories and novels. Prerequisite: 101 and 102; or 120; or equivalent.

225-3 Women in Literature. (Same as Women's Studies 225.) Examines the ways in which women are portrayed in literature, especially in twentieth-century novels, drama, short fiction, and poetry written by women. Prerequisite: 102; or 120.

281-3 Creative Writing: Beginning Fiction. Introduction to basic techniques of writing creative prose with emphasis on characterization, plot, and narrative devices. Study and application of various methods of short story writing. Exercises. Critiques. Prerequisite: 102 or 120; or consent of instructor.

282-3 Creative Writing: Beginning Poetry. Introduction to basic theories and techniques of poetry writing with emphasis on metrics, forms, and poetic stanzas. Study and application of each of these general aspects of writing poetry. Exercises. Critiques. Prerequisite: 102 or 120; or consent of instructor.

284-3 Creative Writing: Introduction to Literary Nonfiction. A survey of the major forms of literary nonfiction (biography, autobiography, popular science, the essay, literary journalism and travel narratives) and an introduction to the stylistic and rhetorical aspects of those forms through study and practice. Prerequisite: 102 or 120; or consent of instructor.

290-3 Intermediate Expository Writing. Designed for any University student, to improve writing skills beyond freshman composition. Based on individual needs and areas of specialization. Prerequisite: 101 and 102; or 120; or equivalent.

291-3 Intermediate Technical Writing. An intermediate course in technical and professional writing for sophomores, juniors, and seniors. Intended for students preparing for careers in applied technology, science, agriculture, business, and other fields where practical writing is a part of the daily routine. Prerequisite: 101 and 102; or 120; or equivalent.

293-3 to 9 (3 per topic) Special Topics in Literature and Language. Topics vary and are announced in advance. Both students and faculty suggest ideas. May be repeated as the topic varies. Prerequisite: departmental approval.

300-3 Introduction to Language Analysis. Nature of language and linguistic inquiry. Dialectology, usage, and chief grammatical descriptions of present day American English. Required of teacher training candidates. Prerequisite: 102 or 120 or equivalent.

301-3 Introduction to Literary Analysis. Intensive reading and writing, designed to acquaint students with basic terms, concepts and discourse of literary analysis. Satisfies CoLA Writing-Across-the-Curriculum requirement for English majors. Restricted to English majors, English minors and Elementary Education majors. Prerequisite: 102 or 120 or equivalent.

302A-3 Literary History of England, Beowulf to 1800. Social, historical, and intellectual backgrounds of English literature with selected readings from each period from Beowulf to 1800. Prerequisite: 102 or 120 or equivalent.

302B-3 Literary History of England, 1800 to Present. Social, historical, and intellectual backgrounds of English literature with selected readings from each period from 1800 to the present. Prerequisite: 102 or 120 or equivalent.

308I-3 Interdisciplinary Studies in Literature. (University Core Curriculum) The course offers seminars in the major works that have shaped our understanding of the modern world through interdisciplinary awareness and study. Seminar topics include Studies in Modernism; Irish Studies; The Politics of Empire; and Literary Studies of Film. The topics will be offered on a rotating basis.

309A-3 American Literature Before 1865. A survey of American literature from the beginning to the Civil War. Prerequisite: 102 or 120 or equivalent.

309B-3 American Literature Since 1865. A survey of American literature from the Civil War to the present. Prerequisite: 102 or 120 or equivalent.

325-3 Black American Writers. (Same as Black American Studies 399.) Poetry, drama, and fiction by Black American writers. Prerequisite: 101 and 102; or 120; or equivalent.

332-3 Folktales and Mythology. A survey of non-classical mythology and folktales, emphasizing its medieval and modern aspects as well as the use of folklore in major literary works. Readings will cover Norse, Celtic, and Middle Eastern mythology, their use by English and American writers, such as Tennyson, Irving, and Hawthorne and the popular folk-ballad. Students are encouraged to explore other aspects of world folklore in their independent research papers. Prerequisite: 102 or 120 or equivalent.

333-3 The Bible as Literature. To introduce students to types of literature in the Bible while familiarizing them with Biblical texts. Prerequisite: 102 or 120 or equivalent.

335-3 The Short Story. Reading and discussion of short stories by American and European authors. Prerequisite: 101 and 102; or 120; or equivalent.

351-3 Forms of Fiction. A study of fictional forms with special concentration on the most significant contemporary fiction including selected readings from current periodicals. This course is taught by a publishing fiction writer and designed for student fiction writers. Prerequisite: 281 or consent of instructor.

352-3 Forms of Poetry. A study of poetic forms with special concentration on the most significant contemporary poetry, including selected readings from current periodicals. This course is taught by a publishing poet and designed for student poets. Prerequisite: 282 or consent of instructor.

365-3 Shakespeare. Reading and discussion of the major plays. Prerequisite: 101 and 102; or 120; or equivalent.

381-3 Creative Writing: Intermediate Fiction. Emphasis on the long short story and novella with exercises and study oriented to more sustained forms of prose than the short story. Theories and techniques of extended fictional forms treated. Critiques. Prerequisite: 281 or consent of instructor.

382-3 Creative Writing: Intermediate Poetry. Concentration on modern forms and theories of poetry. Writing assignments and exercises in the application of various poetic techniques, primarily 20th century American. Critiques. Prerequisite: 282 or consent of instructor.

390-3 Advanced Composition. Expository writing. Prerequisite: C average in 120; or C average in 101 and 102; or equivalent. Open to English majors and minors or with consent of department.

391-3 Precision in Reading and Writing. To improve the student's ability to read and write with precision and clarity, depending on reading complex material (requiring no particular background for comprehension) and on writing precis of it. Prerequisite: grade of B in 102; or C in 120; or C in English 290.

393-3 to 9 (3 per topic) Special Topics in Literature and Language. Topics vary and are announced in advance. Both students and faculty suggest ideas. May be repeated as the topic varies. Prerequisite: departmental approval.

401-3 Modern English Grammars. Survey of the structure of English, with emphasis on phonetics and phonology, morphology, syntax, semantics, pragmatics, grammar instruction, stylistics and language variation. Specifically designed to meet the needs of prospective teachers of composition and language arts at the secondary and college levels.

402-3 Old English Language and Literature. Introduction to the language, literature and culture of Anglo-Saxon England, with emphasis on Old English heroic and elegiac poetry, exclusive of *Beowulf*.

- 403-3 History of the English Language.** The development of the language from its Indo-European roots through Early Modern English and selected American dialects. Emphasis on the geographical, historical and cultural causes of linguistic change.
- 404-3 Middle English Literature Excluding Chaucer.** Selected writings from A.D. 1200-1500 with emphasis on the High Middle Ages. Readings include such works as *The Owl and the Nightingale*, *Piers Plowman*, *Pearl*, *Sir Gawain and the Green Knight*, selection from Arthurian legend and medieval drama, lyric and ballad.
- 405-3 Middle English Literature: Chaucer.** Major works including *Troilus and Criseyde* and selections from *The Canterbury Tales*.
- 412-3 English Non-Dramatic Literature: The Renaissance.** Topics varies, but usually lyric poets, especially 17th-century metaphysical poets such as Donne, Herbert and Marvell.
- 413-3 English Non-Dramatic Literature: The Restoration and Earlier Eighteenth Century.** Major works of Dryden, Pope, and Swift, and the non-dramatic specialties of Behn, Addison and Steele.
- 414-3 English Non-Dramatic Literature: The Later Eighteenth Century.** Major poets from Thomson to Blake, and major prose writers, with emphasis on Johnson, Boswell and their circle.
- 421-3 English Romantic Literature.** Wordsworth, Coleridge, Byron, Shelley, Keats and other writers of the era.
- 422-3 Victorian Poetry.** Tennyson, Browning, Arnold and other poets in England.
- 423-3 Modern British Poetry.** Major modernists (Yeats, Eliot, Pound); with selected works of Auden, Owen, Thomas, Heaney and others.
- 425-3 Modern Continental Poetry.** Representative poems by major 20th century poets of France, Italy, Germany, Spain, Russia, and Greece.
- 426-3 American Poetry to 1900.** Trends and techniques in American poetry to 1900.
- 427-3 American Poetry from 1900 to the Present.** The more important poets since 1900.
- 433-3 Religion and Literature.** Introduce students to the study of religious meaning as it is found in literature.
- 436-3 Major American Writers.** Significant writers from the Puritans to the present. May be repeated only if topic varies and with consent of the department.
- 437-3 American Literature to 1800.** Representative works and authors from the period of exploration and settlement to the Federal period.
- 445-3 Cultural Backgrounds of Western Literature.** A study of ancient Greek and Roman literature, Dante's *Divine Comedy*, and Goethe's *Faust*, as to literary type and historical influence on later Western writers.
- 446-3 Caribbean Literature.** Representative texts from drama, poetry, and fiction that have shaped black diaspora aesthetics in the Caribbean, with special reference to black literature of the North American continent.
- 451-3 Eighteenth Century English Fiction.** The novel from Defoe to Jane Austen. Including works by Fielding, Richardson and others.
- 452-3 Nineteenth Century English Fiction.** The Victorian novel: from 1830, including works by the Brontes, Dickens, George Eliot, Thackeray and others.
- 453-3 Modern British Fiction.** Major writers (including Conrad, Joyce, Woolf and Lawrence), with selected fiction from Mid-Century and later.
- 455-3 Modern Continental Fiction.** Selected major works of Europe and authors such as Mann, Silone, Camus, Kafka, Malraux, Hesse.
- 458-3 American Fiction to 1900.** Trends and techniques in the American novel and short story.
- 459A-3 American Prose from 1900 to Mid-Century: The Modern Age.** Representative narratives from the turn of the century to the post-World War II period.
- 459B-3 American Prose from Mid-Century to the Present: The Postmodern Age.** Representative narratives from the post-World War II period to the present.
- 460-3 Elizabethan and Jacobean Drama.** Elizabethan drama excluding Shakespeare: such Elizabethan playwrights as Greene, Peele, Marlowe, Dekker; and Jacobean drama: such Jacobean and Caroline playwrights as Jonson, Webster, Marston, Middleton, Beaumont and Fletcher, Massinger, Ford, Shirley.
- 462-3 English Restoration and 18th Century Drama.** After 1660, representative types of plays from Dryden to Sheridan.
- 464-3 Modern British Drama.** Major writers (including Shaw and Synge), with selected works of later dramatists such as Churchill and Bond.
- 465-3 Modern Continental Drama.** The continental drama of Europe since 1870; representative plays of Scandinavia, Russia, Germany, France, Italy, Spain and Portugal.
- 468-3 American Drama.** The rise of drama, with emphasis on the 20th century.
- 471-3 Shakespeare: The Early Plays, Histories, and Comedies.** Such plays as *A Midsummer Night's Dream*, *The Merchant of Venice*, *The Taming of the Shrew*, *Henry IV Part I*, *Henry V* and *Much Ado about Nothing*.
- 472-3 Shakespeare: The Major Tragedies, Dark Comedies, and Romances.** Such plays as *Hamlet*, *Macbeth*, *Othello*, *King Lear*, *Measure for Measure*, *The Winter's Tale* and *The Tempest*.
- 473-3 Milton.** A reading of a selection of the minor poems, of *Paradise Lost*, *Paradise Regained*, *Samson Agonistes*, and the major treatises.
- 481-3 Young Adult Literature in a Multicultural Society.** Introduction to the evaluation of literary materials for junior and senior high school, with emphasis on critical approaches and the multicultural features of schools and society. Prerequisite: enrollment in English degree program or consent of department.
- 485-3 Problems in Teaching Composition, Language, Literature and Reading in High School.** Prerequisite: enrollment in English degree program or consent of department.
- 490-3 Expository Writing.** Advanced composition with emphasis on a variety of rhetorical strategies. Prerequisite: English 290, 390 or equivalent.

491-3 Technical Writing. Introduction to technical communication; open to entire university community. Training also provided for students interested in teaching technical writing. Prerequisite: English 290, 291, 390, 391 or equivalent.

492-3 to 9 Creative Writing Seminar. Topic varies among the writing of poetry, fiction or literary nonfiction prose. A directed written project will be submitted at the end of the semester in fiction, poetry or literary nonfiction prose. A collection of short stories or poems, a novel or nonfiction work of what instructors consider to be acceptable quality will fulfill the seminar requirement. Prerequisite: consent of department.

493-3 to 9 (3 per topic) Special Topics in Literature and Language. Topics vary and are announced in advance; both students and faculty suggest ideas. May be repeated as the topic varies.

494-3 Literary Theory Applied to Film. Introduction to contemporary literary theory with emphasis on the literary features of cinema and their interpretation. A \$10 screening fee is required.

495-3 A Survey of Literary Criticism. Introduction to the history of criticism and major recent schools of literary criticism and theory.

498-3 to 9 Internships. For English majors only. Student may take up to nine semester hours to receive credit for internships with SIU Press, Special Collections, University Museum, Coal Center, and other academic units. Prerequisite: enrollment in English degree program. Written approval from department and academic unit.

499-1 to 6 (1 to 3, 1 to 3) Readings in Literature and Language. For English majors only. Prior written departmental approval required. May be repeated as the topic varies, up to the maximum of six semester hours. Prerequisite: enrollment in English degree program or consent of department.

Finance (FIN)

200-3 Personal Finance. An introduction to the problems of personal financial asset management, including income and expense budgeting. Emphasis also placed on consumer credit, insurance, investments, home ownership, and taxation. Will not count toward a major in finance.

270-3 The Legal and Social Environment of Business. An examination of the legal, social, and political forces that influence business and businessmen. Particular attention to the role of law as an agency of social control in the modern business society. Prerequisite: sophomore standing.

280-3 Business Law I. Legal problems arising from situations involving contracts and agency and business organizations. Not pass/fail for business majors.

310-3 Insurance. Fundamentals of insurance and risk management including a study of selected insurance contracts and alternative methods of controlling risk exposures. Prerequisite: junior standing.

320-3 Real Estate. Problems of real estate ownership, management, financing, and development. Prerequisite: junior standing.

321-3 Real Estate Finance. A study of the instruments, techniques, and institutions of real estate finance; sources of and methods for obtaining funds for real estate investments; mortgage risk analyses. Prerequisite: 320 or consent of instructor and junior standing.

322-3 Real Estate Appraisal. The techniques and art of real estate valuation using market comparison, cost, and income approaches. Includes appraisal principles, procedures, and applications. Prerequisite: 320 or consent of instructor and junior standing.

323-3 Real Estate Law. A survey of legal principles applicable to real property, including the following: conveyances, titles, land descriptions, rights and duties of ownership, and the law of real estate brokerage. Prerequisite: 320 or consent of instructor and junior standing.

330-3 Introduction to Finance. Study of issuance, distribution, and purchase of financial claims including the topics of financial management, financial markets, and financial investments. Prerequisite: Accounting 230, Economics 240 and junior standing.

331-3 Investments. Survey of the problems and procedures of investment management; types of investment risks; investment problems of the individual as well as the corporation. Prerequisite: 330 with a grade of C or better; junior standing and must be business (not pre-business) major or consent of department.

341-3 Financial Markets. Operations of capital markets. Sources and uses of funds of financial institutions. Prerequisite: 330 or concurrent enrollment.

350-3 Small Business Financing. Financing problems involved in raising venture capital, debt type funds, expansion funds, and government sponsored funding. Budgeting, working capital management, and fixed asset planning are covered. Prerequisite: Accounting 230, Economics 240 and junior standing.

361-3 Management of Business Finance. The principal problems of managing the financial operations of an enterprise. Emphasis upon analysis and solutions of problems pertaining to policy decisions. Prerequisite: 330 with a grade of C or better and Management 208, business major (not prebusiness).

380-3 Business Law II. Legal problems arising from situations involving sales, commercial paper, secured transactions, suretyship, and bankruptcy. Prerequisite: junior standing.

432-3 Options and Futures Markets. Study of modern concepts and issues in financial options and futures markets. Emphasis on risk management in financial institutions, and applications in corporate finance and funds management. Prerequisite: 331 with a grade of C or better and 361 (361 may be taken concurrently).

433-3 Portfolio Theory and Management. Examination of modern concepts relating to management of security portfolios. Topics include security analysis, Markowitz Portfolio Theory, efficient market hypothesis, portfolio performance measurement, risk, and portfolio construction. Prerequisite: 331 with a grade of C or better, 361 (361 may be taken concurrently).

449-3 Management of Financial Institutions. Principal policies and problems which confront top management. Emphasis on liquidity, loans, investments, deposits, capital funds, financial statements, organization

structure, operations, personnel, cost analysis, and public relations. Not for graduate credit. Prerequisite: 330 and 341 with a grade of C or better.

462-3 Working Capital Management. Short-term budgeting and forecasting techniques used in business; alternative approaches to working capital management including consideration of certainty, risk and uncertainty; theory and applications of management of cash, marketable securities, accounts receivables, inventory, banking relationships, and short-term sources of funds. Prerequisite: 361 or concurrent enrollment.

463-3 Forecasting and Capital Budgeting. Long-term forecasting techniques used in business; alternative approaches to capital structure decisions, cost of capital measurement; and performance measurement for investment decisions including mergers and leasing; explicit consideration of certainty, risk, and uncertainty in investment analysis; theory and applications in private and public sectors. Prerequisite: 361 or concurrent enrollment.

464-3 International Financial Management. Financial behavior of multinational firms. Emphasis on the modification of conventional financial models to incorporate uniquely foreign variables. Prerequisite: 361 or concurrent enrollment.

469-3 Managerial Financial Policy. Development of financial strategies and policies based on an evaluation of alternative approaches. Emphasis upon application of financial concepts and techniques to real-life situations. Not for graduate credit. Prerequisite: 361.

480-3 Problems in Labor Law. Social, economic, and legal evaluations of recent labor problems, court decisions, and legislation. Concern is on long-run legislative impact on manpower planning, dispute settlement, and utilization of employment resources.

491-1 to 6 Readings in Finance. Readings in classical and current writing on selected topics in various areas in the field of finance not available through regularly scheduled courses. Not for graduate credit. Prerequisite: consent of department chair and outstanding record in finance and must be a business (not prebusiness) major or consent of department. Mandatory Pass/Fail.

495-3 Internship in Finance. Designed to provide an opportunity to relate certain types of work experience to the student's academic program and objectives. Approved internship assignments with cooperating companies in the fields of finance are coordinated by the faculty member. Not repeatable for credit. Not for graduate credit. Prerequisite: consent of department chair and outstanding record in finance and must be a business (not prebusiness) major or consent of department. Mandatory Pass/Fail.

Fire Science Management (FSM)

258-1 to 30 Fire Science Work Experience. Credit granted for prior job skills, management-worker relations and supervisory experience while employed in the fire science industry. Credit will be established by departmental evaluation.

259-1 to 60 Fire Science Occupational Education. A designation for credit granted for past occupational educational experiences related to fire science management. Credit will be established by departmental evaluation.

319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

332-3 Labor-Management Problems. The student will gain a general understanding of the economic situation of which labor/management problems represent a subset. Students will develop a perspective on the evolution of labor relations in the United States economy and how the interaction of labor and management differs throughout the world. The collective bargaining section introduces the student to the techniques of bargaining used by labor and management in their ongoing interactions.

350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. This course may be classified as independent study. Prerequisite: consent of instructor.

383-3 Data Interpretation. A course designed for students beginning their major program of study to examine data use in their respective professions. Emphasis will be placed upon an understanding of the basic principles and techniques involved with analysis, synthesis and utilization of data.

387-3 Fiscal Aspects of Fire Service. An introduction to the fiscal problems encountered in the administration of fire service facilities.

388-3 Legal Aspects of Fire Science Management. The student will learn basic law principles, identify sources of American laws, and recognize the structural framework of American law. Additionally, the student will be able to identify the principles of law which relate to management of fire protection services and areas of law which impact on the operations of fire service management, including applicable laws and ordinances (Fire Fighter Bill of Rights, et al), collective bargaining, and state/local civil service Fire/Police Commission provisions hearing protocols. Further, the student is able to effectively participate in the conduct of a mock hearing, following applicable protocols for such, in accordance with due process and legal requirements and effectively document and enforce such findings.

398-3 Risk Management in the Fire Service. This course, designed for the middle-level fire service manager, introduces the concept of risk management and examines its applicability in the fire service. Particular emphasis is placed on developing and implementing a fire service risk management program in both career and paid on-call departments.

402-3 Current Issues in Fire Science Services. A review of the current problems affecting the fire service with particular emphasis on resource allocation, planning, and constraints. Not for graduate credit.

410-3 Fire Prevention and Inspection. Laws and regulations affecting fire prevention; administering building and fire codes; interpreting building, fire prevention, and state fire marshal codes; and inspection procedures. Not for graduate credit.

411-3 Fire Insurance Rating. Analysis of fire hazards for computing fire insurance rates. Actuarial basis of rating schedules with particular emphasis on the analytic system for measurement of relative fire hazard. Not for graduate credit.

413-3 NFPA Standards on Fire Department Safety and Health. This course provides an in-depth examination of the role of the National Fire Protection Association in establishing standards for the Fire Fighting field. Particular emphasis is placed on NFPA Standard 1500, Fire Department Occupation Safety and Health. Not for graduate credit.

421-3 Professional Development. Introduces students to the various elements involved in obtaining a position in their chosen fields. Topics included are: personal inventories, placement services, employment agencies, interviewing techniques, resumes, letters of application, references and employment tests. Each student will develop a portfolio, including personal and professional information related to career goals.

Food and Nutrition (FN)

See also Animal Science for additional 400-level courses.

100-1 Introduction to the Profession of Dietetics. Reviews the history of the profession of dietetics; analyzes the impact of past as well as current societal influences on present and future development in the field of dietetics.

101-2 Nutrition: Contemporary Health Issues. (University Core Curriculum) This course integrates nutrition and promotion of health through prevention of disease and will answer questions found daily in the media regarding nutrition. Topics emphasized are functions of basic nutrients, impact of culture, gender, ethnicity, social environments and lifestyle on nutrition and health.

156-3 Fundamentals of Foods. An introduction to the basic principles and techniques of food preparation. A charge of \$15 will be made for laboratory.

202-3 The Hospitality and Tourism Industries. Introduction to the diverse aspects of the hospitality and tourism industries and the interrelationships between them. Historical development of the industries, trends, current issues and career opportunities will be examined.

206-2 Food Service Sanitation. Basic sanitation principles and application in food service. Employee sanitation training, sanitation standards and safety regulations in the food service industry will be part of the course. Upon completion of the course, students will be eligible for the sanitation certificate national exam. Prerequisite: 156 or equivalent.

215-2 Introduction to Nutrition. (Same as Animal Sciences 215.) An up-to-date study of basic principles of nutrition including classification of nutrients (physical and chemical properties) and their uses in order to provide the student a working knowledge of nutrition in today's environment.

247-3 (1,1,1) The School Lunch Program. (a) Food purchasing; (b) quantity food production; and (c) nutrition practices in the school lunchroom.

256-5 Science of Food. Application of scientific principles including preparation, chemistry, functions, and interrelationships in ingredients and their effects on physical, chemical, and sensory characteristics of foods. Three lectures and two three-hour laboratories per week. A charge of \$20 will be made for laboratory. Prerequisite: Chemistry 140a or 200 and 201.

298-1 Multicultural Food Experience. (Multicultural Applied Experience Course) This course is designed to provide multicultural experience in food selection, eating habits, meal patterns and food preparation. Students will interact with community members of various ethnicity throughout the semester. Shopping and cooking projects will provide firsthand experience. Prerequisite: concurrent or prior registration in one of the following: Anthropology 202, History 210, Philosophy 210, 211 or Sociology 215.

302-3 Dimensions of Tourism. In-depth examination of the components of the travel and tourism industry, motivators to travel, and the various market segments. Also covers analysis of the economic, social, cultural and environmental impacts to tourism. Prerequisite: 202 or consent of instructor.

320-3 Foundations of Human Nutrition. Principles of human nutrition in relation to intermediary metabolism and the role of vitamins and minerals. Prerequisite: 215, Chemistry 140a or equivalent.

321-3 Food and Nutrition Assessments. Demonstration and use of tools and practices in assessing food and nutrition behaviors of individuals and groups in clinical and community nutrition care settings. Includes merchandising food and nutrition services as part of marketing strategies. Prerequisites: 215, 256.

335-3 Beverage Management. Introduction to beers, wines and spirits. Legal responsibilities of alcohol service. Introduction to responsible beverage service and management. A charge of \$10 will be made for laboratory. Prerequisite: 156 or equivalent and must be a food and nutrition major.

356-3 Experimental Foods. Experimental approach to the study of factors influencing the behavior of foods. Individual problems. A charge of \$10 will be made for laboratory. Prerequisite: 256.

360-4 Quantity Food Production. Selection and use of institutional foodservice equipment including specifications, cost and care; use of standardized formulas, techniques of quantity preparation, and service of food to large groups. Prerequisite: 156 or 256 or equivalent.

361-3 Hospitality Development. Development issues in the hospitality industry. Case studies on purchase/construction issues, inflation and recession, fiscal management and expansion of hospitality firms. Family-owned and operated businesses and entrepreneurship will be addressed.

363-3 Purchasing Management in the Hospitality Industry. Managerial principles of purchasing in the hospitality industry, with emphasis on functions of purchasing agents, types of markets, and methods of purchasing. Prerequisite: 156 or equivalent.

371-2 Field Experience. Opportunity for supervised learning experiences in the student's major. Prerequisite: consent of instructor or chair.

372-3 Front Office Management. Principles and concepts of effective front office management in the lodging industry.

373-3 Food and Beverage Cost Control. Examination of the managerial responsibilities of the food and beverage manager in the hospitality operation. Management methods in budgeting, forecasting, cost control, and establishing operational policies and systems. A charge of \$15 will be made for laboratory.

390-1 to 4 Special Studies in Food and Nutrition. Enables students to pursue personal research interests in the food and nutrition area. Prerequisite: juniors and seniors only and consent of department.

410-3 Nutrition Education. Course provides principles, techniques and evaluation methods necessary to incorporate food and nutrition into the educational curriculum of schools, hospitals, out-patient clinics and health agencies. Principles of interviewing, counseling and education are discussed. Prerequisite: 321.

420-3 Recent Developments in Nutrition. Critical study of current scientific literature in nutrition. Prerequisite: 320 or equivalent.

421-2 Recent Trends in Food. Critical study of current scientific literature in food. Prerequisite: 320 or equivalent.

425-3 Energy and Nutrition Utilization. The interrelationship of cell physiology, metabolism and nutrition as related to energy and nutrient utilization, including host needs and biochemical disorders and diseases requiring specific nutrition therapy or consideration. Prerequisites: 320, Chemistry 140b, Physiology 310.

435-3 Hospitality Marketing Management. Marketing principles and practices from a hospitality management perspective. Develops the use of marketing tools as an integral part of any hospitality and tourism operation. Prerequisite: 202 and Marketing 304.

460-4 Food Service Management. The course includes practical experience in the operational administration of a foodservice facility. Provides students an opportunity to exercise their ability and creativity to manage a noon luncheon service for the Student Center Old Main Room. The lab involves situations in which students fill the different roles involved with food service management. Prerequisite: 360.

461-3 Service Organization and Management in the Hospitality Industry. Managerial aspects of the hospitality industry as related to the provision of quality service. Organizational structures, management techniques, decision-making abilities, ethics, leadership, and human resource issues are examined. Prerequisite: 435 and Management 304.

470-3 Medical Nutrition Therapy. Physiological and biochemical changes associated with certain diseases and the appropriate nutrition therapy. Prerequisite: 320, Chemistry 140b and Physiology 310.

472-3 Applied Medical Nutrition Therapy. Application of nutrition principles to the management of patients with altered physiological and biochemical states. Off-campus experiences may be required. Prerequisite: 470 or concurrent enrollment and consent of instructor.

473-3 Hotel Administration. An advanced hotel administration course covering contemporary management issues such as conference management, hotel security, strategic planning and hotel law. Prerequisite: 372 or consent of instructor.

480-3 Community Nutrition. Offers a study of the objectives, implementation strategies, and evaluation methods of nutrition programs in communities' health programs. Integration of nutrition into the health care delivery system at local, state, and federal levels is included.

490-3 Nutrition and Growth. The study of human nutrition during each phase of the life cycle, prenatal through geriatric. Students elect at least two phases for in-depth study. A general review of basic nutrition is included. Prerequisite: 320 or equivalent.

Foreign Languages and Literatures (FL)

For other Foreign Language courses see Chinese, Classics, East Asia, French, German, Japanese, Russian and Spanish.

101-3 Classical Civilization. Same as Women's Studies 101.(University Core Curriculum) A survey of classical civilization from the Minoans to the Roman Empire with three foci: Homeric and Classical Greece, and the Roman Experience as seen by its artists.

230-3 Classical Mythology. (University Core Curriculum) (Same as Women's Studies 364.) An inquiry into the nature of myth and its relevance today while studying selected myths principally of the Greeks and Romans.

258-1 to 4 Work Experience. Ungraded credit for work experience which has taken place subsequent to admission to SIUC. Such experience must be related to student's major in a foreign language or FLIT. Mandatory Pass/Fail. Prerequisite: sophomore standing and approval by chair if foreign language major or by director if FLIT major.

298-1 Multicultural Applied Experience. (Multicultural Applied Experience Course) An applied experience, service-oriented credit in American diversity involving a group different from the student's own. Difference can be manifested by age, gender, ethnicity, nationality, political affiliation, race or class. Students can sign up

for the one-credit experience in the same semester they fulfill the multicultural requirement for the University Core Curriculum or coordinate the credit with a particular core course on American diversity, although neither is required. Students should consult the department for course specifications regarding grading, work requirements and supervision. Grade Pass/Fail.

300-3 to 6 (3,3) Masterpieces of World Literature. Readings from and discussions of both Western and Eastern literatures, taken from ancient to modern times. Occasional guest lectures by faculty of the department, who speak on their areas of special interest. All readings and lectures in English.

310I-3 Classical Themes and Contemporary Life: Seminar Series. (University Core Curriculum) Specific aspects of Classical Civilization are compared with aspects of our own society. In alternate years, the course will treat different themes, e.g., Drama's Birthplace: Classical Athens; Roman Heroes and Anti-Heroes, or Athletics, Sports and Games in the Ancient World. When offered in Europe, the course will focus on how these values are reflected in architecture, art, the military and the arena from ancient times through the Renaissance and beyond.

313I-3 East Asian Civilization. (University Core Curriculum) An introduction to East Asian cultural traditions, literature, philosophy, history, art and social organization of China and Japan.

400A-3 to 12 Variable Elementary Languages. Elementary conversational skills in a language not otherwise taught in this department. Since emphasis is on oral skills only, course does not fulfill any college or departmental language requirement. Language taught varies from year to year. Must be taken in a, b sequence.

400B-3 to 12 Variable Elementary Languages. Elementary conversational skills in a language not otherwise taught in this department. Since emphasis is on oral skills only, course does not fulfill any college or departmental language requirement. Language taught varies from year to year. Must be taken in a, b sequence.

436-3 Methods in Teaching Foreign Languages. Survey of general principles of second-language teaching, based upon insights of modern linguistics and learning-psychology. Followed by intensive practical work in classroom and language laboratory with teachers experienced in the student's specific language field. Required of prospective teachers of foreign languages in secondary schools. Prerequisite: concurrent or prior enrollment in 300-level course in French, German, Latin, Russian, or Spanish.

475B-1 to 40 Study Abroad in Bregenz, Austria. One or two semesters at SIUC's International Center in Bregenz, Austria. A combination of regular SIUC courses in history, political science, art history, business, etc., and program-specific courses in the area of European studies all taught in English as well as German language courses at all levels are offered in a European setting. No prior knowledge of German is required, but students are expected to take German language courses in Austria at their appropriate level. This course or 475V is highly recommended for German and/or FLIT majors. Not for graduate credit. Students will be charged on the basis of 15 hours per semester regardless of the hours of credit actually earned. Prerequisite: 2.75 overall grade point average.

475V-1 to 40 Study Abroad in Vienna, Austria. One or two semesters at the University of Vienna and the Economics University, Vienna, Austria. All courses taught in German. Students may obtain 30 to 40 semester hours of credit in German language, literature and civilization, and with prior approval, in elective areas of study including music, art, architecture, history, anthropology, political science, physical education, business, economics, and sociology. This course or 475B is highly recommended for German and/or FLIT majors. Not for graduate credit. Students will be charged on the basis of 15 hours per semester regardless of the hours of credit actually earned. Prerequisite: 5 semesters of college German or equivalent with a 3.0 grade point average.

495-3 to 12 (3 to 6, 3 to 6) Internship. Provides structure for application and expansion of knowledge gained through extensive preparatory course work in the subject area for the internship, as well as in the foreign language which has been studied. Normally taken abroad, in a country where the foreign language acquired by the student is universally used. Not for graduate credit. Prerequisite: senior standing and written approval from the director of Foreign Language and International Trade. This approval is subject to satisfactory completion of both oral and written language competency exams before the internship begins.

French (FR)

123-8 (4,4) Elementary French. The basic skills of listening, speaking, reading, and writing. No previous knowledge of French is required. Must be taken in a,b sequence.

124-2 Elementary French Conversation. Conversation skills for beginners. Special emphasis on tourist vocabulary. Prerequisite: concurrent enrollment in 123b or consent of instructor.

190-5 Review of Elementary French. A review course on first year level for students who have had two or more years of high school French or equivalent.

201-8 (4,4) Intermediate French. Grammar review, translation, oral practice, written composition, and development of reading skills. Reading of material on contemporary France and selections from French literature. Prerequisite: 123b, 190, or two years of high school French, or equivalent.

220-2 to 4 (2,2) Intermediate French Conversation. Development of oral skills on the intermediate level. Not usually accepted toward major requirement. Prerequisite: 123b or 190 or equivalent.

300-3 Image of Women in French Literature. (Same as Womens Studies 352.) Female characters as they are represented in French literature through the centuries; the development of a psychological and sociological point of view of women through the examination of women's roles in French literature. Conducted in English. Counted toward major only with consent of adviser.

310-4 Development of French Literature from the Middle Ages Through the Eighteenth Century. Major literary movements and authors as exemplified in representative works.

311-3 Modern French Literature. The themes, structures, and language of some major works of poets, novelists, and playwrights from the early Romantics through the Existentialists and Robbe-Grillet.

320-6 (3,3) Advanced Language Skills. A review of grammar and syntax with extensive practice in translation and composition. Reading of French texts as basis for discussion and papers. Must be taken in a,b sequence. Prerequisite: grade of B or better in 201b or permission of instructor.

321-3 Advanced Conversation. Improvement of self-expression and aural comprehension. Expansion of vocabulary and idioms emphasized through classroom and language laboratory work. Highly recommended for those students with a major in French. Prerequisite: 201b.

330-3 Introduction to Literary Analysis. Examination of the basic elements of literary expression; practice of rudimentary *explications de textes*. Selections for study are taken from important works of French literature and analyses are directed toward developing the students' artistic sensibilities as well as improving their analytical skills.

335-3 Business French. An overview of cultural, economic, and commercial France. Study through readings and discussions of the following topics: government, agriculture, industry, and commerce; Common Market and foreign trade, financial institutions and taxation, social classes, and the world of work. France as a society of consumption. Translations and some commercial correspondence. Prerequisite: 320a or equivalent.

350-3 French Phonetics. Introduction to French phonetics involving perception and production of spoken French. Emphasis on corrective pronunciation and avoidance of English interference. Prerequisite: 201B or consent of faculty.

375-1 to 6 Travel-Study in France. Travel-Study project, planned under supervision of French faculty and carried out in France. Prerequisite: 201b, and consent of faculty.

388-3 French as a Research Tool. Intensive study of French as basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor.

390-1 to 6 Independent Study in French. Individual exploration of some question, author, or theme of significance within the field of French literature, language, or culture. Prerequisite: consent of instructor.

410-3 Advanced Language Study. Designed to improve language skills beyond the level of 320. Selected grammar review intensive practice in effective use of the written and spoken language through translations and free compositions. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite 320b.

411-3 Linguistic Structure of French. (Same as Linguistics 413.) Study of the phonology, morphology, and syntax of modern spoken and written French, stressing interference areas for English speakers in learning French. Prerequisite: 320a and 321 or equivalent.

412-4 History of the French Language. A survey of the phonological and morphological changes from Latin through Vulgar Latin and Old French to Modern French; study of an original Old French text, such as the *Chanson de Roland* or a romance of Chretien de Troyes. Knowledge of Latin not required.

414-3 Translation Techniques. Practice in oral translation — simultaneous and subsequent; written translation practice, from and into French, of materials from sources varying from technical, commercial, political, to general interest. Advanced grammar and syntax review as they relate to translation, with practice through exercises and translation. Prerequisite: 320a or equivalent.

415-3 Literary Stylistics. A study of the aesthetics and theory of French Literary expression. Disciplined stylistic analyses of excerpts from representative works of great French authors. Appreciation of distinctive qualities of each writer's genius. Consideration is given to various stylistic methods.

419-3 Romance Philology. (Same as Spanish 419.) Historical and comparative study of the major Romance languages: their phonology, morphology, and syntax.

420-3 Medieval and Renaissance Literature. Study of the origins of French literature emphasizing the *Chanson de Roland*, *Tristan*, other courtly romances, and the lyric poetry of Villon, culminating with an examination of the development of the humanistic ideas and ideals of the French Renaissance.

430-4 Baroque and Classicism. An in-depth examination of artistic and social writings of baroque and classical literary figures such as Corneille, Racine, Moliere, La Fontaine, Descartes, Pascal, Mme de LaFayette, La Bruyere, and La Rochefoucauld. Discussion, reports, papers.

435-3 Business French II. Detailed treatment of postal facilities and services, types of banks and their operations, transport of goods, import-export, bills of exchange, billing and shipping, insurance, accounting, and the stock market. These topics will be the subject of translations and of commercial correspondence. Prerequisite: 320b or equivalent, may be taken independently of 335.

440-3 Literature of the Enlightenment. Study and discussion of the novel, theater, and philosophic writing of 18th century France as literature and as expressions of the Enlightenment. Major attention given to Montesquieu, Voltaire, Diderot, and Rousseau.

450-4 Literary Movements of the 19th Century. Romanticism, Realism, and Naturalism in the novel and theater followed by an examination of the reaction to these movements and of the influence of symbolism.

460-4 Studies in Literature of the 20th Century. Examination of the major themes, forms, techniques, and style of novelists from Gide and Proust to Robbe-Grillet and dramatists from Giraudoux to Ionesco and Beckett.

470-4 French Culture and Civilization. Study of contemporary France: values, attitudes, beliefs, and instructions. French civilization (history, literature, and the arts) will be treated mainly as a means of better understanding present day France. Offered in French. Prerequisite: 320a or permission of instructor.

475-3 to 6 Travel-Study in France. Travel-study project, planned under supervision of French faculty and carried out in France. Amount of credit depending on scope of study. Prerequisite: 320a or equivalent.

476-3 to 6 (3,3) French Civilization Outside of France. Encompasses a number of individual courses, each of which focuses on one of the many areas of the world in which France has played a significant role. Manifestations of French culture and civilization, past and present, are studied and evaluated within the framework of an evolving local and global historic context.

488-3 Advanced French as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of B or A, satisfies graduate program requirement for foreign languages as research tool. Prerequisite: 388 or one year of French, or equivalent.

490-1 to 6 Advanced Independent Study in French. Individual exploration of some question, author, or theme of significance within the field of French literature, language or culture. Prerequisite: 320a, 321 and consent of instructor.

Forestry (FOR)

200-1 Introduction to Forestry. Acquaints students with the broad field of multiple-use forestry. Special emphasis is given to forestry as a profession. Required field trips cost \$15.

201-3 Ecology of North American Forests. An introduction to forest ecology concepts, site factors, and forests of North America. Emphasis is placed on the silvics of tree species and the impact of soil, climate, and topography on forest vegetation. Forest site-community relationships of selected major North American forest ecosystems will be studied. Saturday field trip may be required at a cost not to exceed \$10. Prerequisite: Plant Biology 200, Plant and Soil Science 240, Biology 307, or consent of instructor.

202-2 (1,1) Tree Identification Laboratory. A two-semester course that teaches field and laboratory identification of trees and shrubs using leaf, twig, bark, and fruit characteristics. Saturday field trips may be required. Extra costs total \$20 unless paid in 201. Must be taken in a,b sequence, unless otherwise arranged with consent of instructor. Prerequisite: Plant Biology 200.

310-4 Practices of Silviculture. Detailed study of classical concepts and recently developed techniques utilized in silviculture treatment of forests. Major emphasis is to be placed upon establishment, thinning, timber stand improvement, and regeneration of forest. Prerequisite: 331.

310C-2 Silviculture Field Studies. Field experience for the student in the various facets of silviculture including planning, thinning, harvesting, timber stand improvement, and site-growth relationships. Offered only at summer camp. Costs for students are given in forestry description. Prerequisite: 331 and 310.

311-3 Resources Photogrammetry. The science and art of obtaining reliable measurement by means of photographs, detection of disease, insects, and fire invasion by remote sensors; and delineation of resources boundaries through interpretation.

313-3 Harvesting Forest Crops. Emphasis is given to lumber sale layouts, sale contracts, and harvest engineering methods. Consideration is given to the environmental impacts of harvesting. Additional cost: \$25. Prerequisite: 310 and 312.

314-3 Insect, Abiotic, and Other Stresses Within the Forest. The impact, recognition, and control of destructive forces within the forest environment. Emphasis placed upon stresses due to climatic factors, macro-parasitic plants, chemical injury, pollution, animal damage, and forest insect pests. Prerequisite: 331, Plant Biology 200, and Zoology 118 or consent of instructor.

314C-2 Forest Protection Field Studies. The prevention and suppression of forest fires, the recognition and control of insect and disease organisms and other destructive agents in the forest. Summer camp only. Cost per student given in the forestry description. Requires additional expenses of approximately \$20 per student. Prerequisite: 331 and two of the following: 314, 315, Plant Biology 357.

315-3 Fire in Wildland Management. Fire as a phenomenon in wildland management. Topics covered are fire prevention, detection, suppression, behavior, effects, use, and economics. Major emphasis is on fire control and fire ecology. Prerequisite: 331.

320-2 Recreation in Wildlands Environments. Trends in recreational use of wildland environments and emphasis on state and federal parks and forests. Introductory concepts in recreation management, planning, and interpretation.

320C-1 Forest and Wildlands Recreation Field Studies. Recreation of forest and adjacent lands with emphasis on parks and national forests. Administration; interpretation; trends in use and development. Offered only at spring camp (costs per student are given in the forestry description). Requires supplemental purchases of approximately \$2 per student.

331-3 Forest Ecosystems. An analysis and integration of tree growth and of forest structure, material and energy flow, and classification in relation to climatic and edaphic factors to provide an ecological basis for management of forest ecosystems. Prerequisite: 201, 202, Biology 307, Plant and Soil Science 240.

341-3 Forestry Practices. The fundamentals of integrated resource management of timberlands. Management systems, tree stand measurements. Planting and harvesting methods, multiple-use aspects of forest lands. Field trips. Emphasis on small forest ownerships. Not for graduation credit in forest resource's management option.

350-3 Woods as a Raw Material. Structure, identification, and properties of wood. Important species, significance of properties to end-use and significance of wood to the environment.

351-3 Forest Resources Measurements. Introductory measurement, statistical and data processing concepts; volume, growth, and yield of forest products; methods of sampling forest resources. Field trips. Prerequisite: Mathematics 140 and 283.

351C-1 Forest Resources Measurements Field Studies. Methods of determining volume and quality of forest products, forest resource inventory procedures, growth, and productivity studies. Field trips. Prerequisite: 351.

360C-1 Forest Industries Field Studies. A study of primary and secondary forest product processing in the central hardwood region. Course requires field trips. Estimated trip costs \$50.

381-1 Forestry Seminar. Presentation of topics pertinent to multiple-use management and utilization of forest resources. Prerequisite: senior standing.

391-1 to 4 Special Problems in Forest Resources. Independent research sufficiently important to require three hours per week of productive work for each hour of credit.

401-3 Fundamentals of Environmental Education. (See Agriculture 401.)

402-3 Wildland Hydrology. Fundamentals of hydrology as related to forest and wildland water resources will be emphasized. Considerations will include the hydrologic cycle with emphasis on soil and groundwater regimes, evapotranspiration, surface and subsurface runoff, and the quantity and timing of water yield. Offered spring semester odd years.

403-3 Intro to Agroforestry. This introductory, lecture-discussion course will examine the various agroforestry concepts, systems, technologies and practices. Focus will be on the potential use and benefits of agroforestry, which involves the deliberate combining of woody perennials with herbaceous/agronomic crops and/or animals, on the same land management unit, in some form of spatial arrangement and/or temporal sequence to produce desirable ecological and economical interactions among the different components. Prerequisite: junior standing or consent of instructor.

405-2 Forest Management for Wildlife. Interrelations between forest practices and wildlife populations. Emphasis is on habitat requirements of different wildlife species and ways to manipulate the forest to improve wildlife habitats. Prerequisite: forestry major, or consent of instructor.

408-4 Introduction to Remote Sensing and Geographic Information Systems. Introduction to the important characteristics of platforms and sensor systems used in modern remote sensing applications to forestry and the storage, analysis and display of this information by micro computers using vector and raster GIS configurations. Prerequisite: 414 and advanced standing.

409-3 Forest Resources Decision-Making. Examines management planning decision-making for multiple-use forests particularly in the public sector. Reviews concepts useful for analyzing flow-resource problems, emphasizing systems approaches, introduces use of modern quantitative methods to evaluate resource use alternatives. Case studies. Prerequisite: 411, Mathematics 140.

410-3 Forest Resources Administration and Policy. Nature of administrative organizations and influences on behavior of organization members. Society influences causing changes in forestry related organizations. Policy formation and implementation, including roles of special interest groups.

411-3 Forest Resources Economics. Application of Micro- and Macro-economic principles to forest timber and non-timber production; capital theory, benefit-cost analysis; and economics of conservation. Prerequisite: Mathematics 140 and Economics 240 or Agribusiness Economics 204.

412-2 Tree Improvement. Basic theories and techniques of obtaining genetically superior trees for forest regeneration. Prerequisite: senior standing.

414-3 Information Management. The collection of physical, biological, and social variables in the field of forestry through sampling survey. The procedures of data manipulation and calculation and the presentation of graphs and tables.

416-3 Forest Resource Management. The application of business procedures and technical forestry principles to manage forest properties. Emphasis on integrated resource management for tangible and intangible benefits. Field trips and supplemental purchases approximately \$25 for student. Prerequisite: summer camp or consent of instructor.

417-2 Forest Land-Use Planning. Principles of location theory as a basis for determining land use; supply of forest land; population pressure and demand; conservation principles; determination of forest land values; institutional factors influencing forest land-use; forest taxation; special taxes, and capital gains. Taught in alternate years. Prerequisite: 411 or consent of instructor.

418-2 Marketing of Forest Products. The role of marketing in the forest industries; review of economic principles; product policy, planning the product line, pricing, marketing channels, marketing programs, marketing organization, and marketing research as influences on the marketing of lumber, wood products, pulp, and paper. Taught in alternate years. Prerequisite: 411 or consent of instructor.

420-3 Park and Wildlands Management. The management of state and federal parks and recreation areas. A systems approach toward management and decision-making will be emphasized. Requires supplemental purchases of approximately \$5 per student. Prerequisite: 320c.

421-3 Recreation Land-Use Planning. Principles and methods for land-use planning of park and recreation environments with emphasis on large regional parks. Focus on planning process and types of information to gather and organize. Application in group field projects. Prerequisite: 320, 420, or consent of instructor.

422C-4 Park and Wildlands Management Camp. A study of park conditions, visitors, and management practices at selected county, state, and federal park systems in the United States, including the federal wilderness preservation system. Course requires a field trip and supplemental purchases. Prerequisite: 320 and 320c and consent of instructor.

423-3 Environmental Interpretation. (See Agriculture 423.)

430-3 Wildland Watershed Management. Emphasis is placed on the principles, technical problems, procedures, alternatives, and consequences encountered in managing wildland watersheds for the production of quality water in harmony with other uses. Prerequisite: 331.

431-3 Regional Silviculture. Designed to evaluate the various silvicultural practices as they are commonly employed in various regions of the United States. Offered alternate years. Prerequisite: 310.

451-2 Natural Resources Inventory. Theory and practical problems in biometrics to obtain estimates of natural resource populations. Use of computers and other advanced techniques. Case studies of inventory procedures. Field trip cost — maximum \$20. Prerequisite: 351 or consent of instructor.

452-2 Forest Soils. Characterization and fundamental concepts of forest soils and their relationships to forest communities and forest management practices. Emphasis is on the origin of forest soil material, soil forming processes, and the chemical, physical, and biological properties of soils as related to forests and forest management. Prerequisite: Plant and Soil Science 240 and concurrent enrollment in Forestry 452L. Spring semester even years.

452L-2 Forest Soils Laboratory. Companion laboratory for 452. Emphasis is on methods to characterize and evaluate the chemical, physical, and biological properties of forest soils. Prerequisite: Plant and Soil Science 240 and concurrent registration in Forestry 452. Spring semester even years.

453-2 Environmental Impact Assessment in Forestry. Methods of assessing the environmental impact of land-use systems on forest resources and assessing the impact of forest management systems on environmental quality are presented. Case studies culminating in the preparation of environmental impact statements are emphasized. Field trips cost, \$20. Prerequisite: senior standing in a natural resource major.

454-2 to 8 Forest Ecology Field Studies. A study of forest communities, soils, and site conditions in one of the following ecosystems: (a) Boreal; (b) lake states; (c) Southern Appalachians; (d) Southern pine. Course requires a field trip of about 10 days. Each trip is two semester credits; a maximum of 6 credits may be applied toward graduate credit. Estimated cost \$125.00 per trip. Prerequisite: senior standing in natural resources or biological sciences, courses in tree identification, forest ecology, and soils, and consent of instructor.

460-2 Forest Industries. Analysis of raw material requirements, the processes and the products of forest industries. The environmental impact of each forest industry will also be discussed.

470-2 Wilderness Management, Policy, and Ethics. Study of current management philosophy and practice in America's wilderness. Analysis of current wilderness policy and its historical evolution. Discussion of the evolution of the wilderness idea and the individuals that have influenced it. Weekend field trip required. Prerequisite: 320 or consent of instructor.

480-3 Natural Resource Advocacy. Examines the role and methods of interest groups in influencing natural resource policies. Emphasis on applied methods, techniques and strategies for achieving interest group objectives in natural resource management. Prerequisite: junior standing or consent of instructor.

485-3 Social Influences on Forestry. Study of, and practice in, methods used for effecting social change in forestry and allied natural resource fields. Case studies, readings and survey research methodology are used to develop an understanding of the role of public opinion in ecologically sound natural resource decision making. Prerequisite: senior standing, and a course in statistics.

490A-2 Resources Management Consortium. Intensive field course in resources management decision making. Student serves as team member in solving resource problems in forestry, wildlife management, recreation, and interpretation at Land Between the Lakes. Enrollment is limited to six. Course taught at Land Between the Lakes. Cost of room and board not to exceed \$100. Not for graduate credit. Prerequisite: consent of instructor.

492-1 to 4 Special Studies for Honor Students. Research and individual problems in forestry. Not for graduate credit. Prerequisite: consent of the department chair and a 3.0 minimum grade point average.

494-1 to 6 Practicum. Supervised practicum in a professional setting. Emphasis on administration, supervision, teaching and program leadership in community, school, park, forest, institution, and public or private agencies. Students should enroll according to their curriculum specialization: (a) Forest environmental assessment, (b) outdoor recreation resource management, (c) forest resources management. Prerequisite: consent of instructor.

Geography (GEOG)

103-3 World Geography. (University Core Curriculum) Examination of the world's major geographic patterns, the diversity of environments, cultures and economic activities, differences between developing and developed nations, interdependence of nations and regions through communication and trade and in-depth assessment of representative environmental issues.

224-3 Geography of Natural Hazards. Damage from natural hazards in the United States is on the rise while loss-of-life has been declining. Losses from earthquakes, floods, hurricanes, tornadoes, drought, hail, and urban snow in the United States are reviewed. The range of alternatives to cope with natural hazards are appraised; and special attention is given to problems characteristic of all natural hazards — warnings, relief and rehabilitation, insurance, and land-use management.

300-3 Themes in Geography. The nature of geography, the kinds of problems which it investigates, the methods it uses. This course satisfies the CoLA Writing Across the Curriculum requirement. Charges not to exceed \$5 for field trip.

302-3 Physical Geography. A study of the earth's physical surface, world distribution patterns of the physical elements, their relationship to each other and their importance to people. Field trip and laboratory work. Charges not to exceed \$5 for field trips. Prerequisite: 300 or consent.

303I-3 The Earth's Biophysical Environments. (University Core Curriculum) Deals with components of the biophysical environment, including weather and climate, tectonics and geomorphic, soil-forming and ecologic processes as they create dynamic landscapes. Environmental issues tied to landscapes are presented and de-

bated. Laboratories combine field studies, data analysis, computer simulations and discussions about issues related to environmental processes.

304-3 Economic Geography. Natural resources in the world economy. This course first introduces the structure of the world economy emphasizing interaction between the developed and underdeveloped nations. World production and trade in the agriculture and energy industries is analyzed from a world system perspective. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: 300 or consent.

306-3 Cultural Geography. An overview of the geographic viewpoint in the study of the human occupancy of the earth. Aspects of population, settlement, and political geography are treated, and a generalized survey of major world cultural areas is used to integrate course elements. Prerequisite: 300 or consent.

310-3 Introduction to Cartography. An introduction to the study of maps and the techniques of map making. Concepts concerning scale, projection, generalization and design are discussed. Emphasis is placed on the use of maps as tools for the representation of spatial patterns and the solution of geographic problems. Students will construct both small scale statistical maps and large scale site maps using manual and computer-based techniques. Two hours of lecture, two hours of laboratory each week. Prerequisite: 300 or consent of instructor.

320-3 Introduction to Environmental Planning. Analysis of social responses to environmental challenges requiring policy action (air and water pollution, land use and ecosystem degradation, etc.). Particular focus is on the current legal framework for environmental regulation.

326-3 Geography of Urban Environments. Explores the historic and present relationship between people and the urban environment, and between urban places and the sites which they occupy. Systems of measuring environmental quality are reviewed along with methods of assessing and forecasting change in the total urban environment. This course satisfies the CoLA Writing Across the Curriculum requirement.

330-3 Weather. An examination of the natural processes which create weather and its temporal and geographic variations and an analysis of the basics of weather forecasting. Current tools and techniques of weather analysis will be applied to weather forecasting of storms, blizzards, hurricanes, tornadoes, drought and flooding. Follows a lecture/workshop-discussion format. Workshops will emphasize weather experiments and forecasting simulations. Satisfies CoLA science requirement.

331-2 The Human Use of Climate. Introduces the basic concepts in the functioning of the climatic environment at the earth's surfaces and develops a holistic view of the way parts and processes of the earth interact through exchanges of energy and water with reference to questions of the human use of the earth.

332-3 Oceanography. A systematic review of the world's oceans, with study of the nature of ocean water, the role of oceans in the Hydrologic Cycle, characteristics of ocean basins, the transport of ocean water, materials and energy exchanges in the oceans, and ocean management and resource problems.

360-3 Geography of Illinois. Introduces and explores some of the spatial elements of the physical and human geography of the State of Illinois through a comparative analysis of the urban and rural lifespaces. Specific geographic issues and problems are selected by the students for group discussion and analysis. Charges not to exceed \$5 for field trips.

361-3 Regional Geography of the United States. A survey of environmental, economic, and historical factors and problems in the development of the United States and its regions. Analysis of population trends, assessment of economic activities, and analysis of transportation networks from a geographic perspective are introduced. Some attention is given to the United States in the world economy.

362-2 Regional Geography of Europe. Introduces present-day Europe. Survey of the area and an investigation of problems and issues affecting the region.

363-2 Regional Geography of Mediterranean Lands and Southwestern Asia. Geography of northern Africa and the Near East in a systematic context. Settlement and land use patterns, cultural history and diversity, and contemporary problems.

365-2 Regional Geography of Sub-Saharan Africa. (Same as Black American Studies 380.) Analysis and explanation of emerging spatial pattern of socio-economic development in Africa as most meaningful to the geographer in assessing the continent's transition from traditional to modern political, social, and economic systems.

366-2 Regional Geography: Eastern and Southern Asia. Introduces present-day Eastern and Southern Asia. Survey of the area and an investigation of problems and issues affecting the region.

367-2 Regional Geography of South America. Analysis of the landscapes of tropical and Andean South America. Historical background of current patterns and problems. Present and future development problems in terms of natural resources, economic, and agricultural systems, and ethnic and settlement patterns.

400-3 Geography of Outdoor Recreation. Analysis of patterns of outdoor recreation with an emphasis on metropolitan areas. Selected topics include demand forecasting methods, cost-benefit analysis and the valuation of recreation resources, and an analysis of the socioeconomic and spatial impacts of recreation facility provision.

404-3 Spatial Analysis. The purpose of this course is to equip the student with a series of perspectives and tools with which to view spatial phenomena. Emphasis is placed on methodological approaches to the analysis of a real distributions and phenomena. Longitudinal analysis of data is included. Prerequisite: 300. Geography 410 is advisable or consent of instructor.

406A-2 Introduction to Remote Sensing. An introduction to remote sensing as applied to the study of environmental systems. This course will examine the theoretical and practical concerns associated with the use and analysis of aerial photography and satellite imagery. Geography majors must take 406a and 406b concurrently. Others may take an approved alternative course in another department as a substitute for 406b.

406B-1 Introduction to Remote Sensing Laboratory. A hands-on, laboratory-based class that introduces students to remote sensing techniques as applied to geographical analysis. Emphasis is placed on the manual interpretation and analysis of remotely sensed photographs and imagery. However, students will be introduced to state of the art digital image processing technology. Geography majors must take 406a and 406b concurrently. Others may take an approved alternative course in another department as a substitute for 406b.

408-3 Advanced Remote Sensing. Advanced techniques in the analysis of remotely sensed data. Emphasis is placed on digital image processing using state of the art technology. Students will be expected to develop individual problem-driven projects that use the knowledge, tools and techniques that are developed in this course. Two hours of lecture, two hours of laboratory each week. Prerequisite: 406a and 406b or consent of instructor.

410-4 Techniques in Geography. Geographic applications of basic and advanced statistical and mathematical techniques, including basic descriptive statistics, hypothesis testing, regression and correlation, analysis of variance, and nonparametric statistics. Special emphasis on a real measures: nearest neighbor analysis, etc. Prerequisite: 300 or consent.

416-3 Analytical Cartography. Introduction to computer and analytical cartography. Students examine techniques for the representation, manipulation and display of spatial data using computer mapping techniques and software. Emphasis will be placed on algorithmic solutions to common cartographic problems. Students will be expected to complete a team based project that uses automated cartographic techniques to address a geographic problem. Prerequisite: 310 or computer literacy, or consent of instructor.

418A-2 Introduction to Geographic Information Systems. An introduction to geographic information systems (GIS) as it is applied to environmental problem solving. Examines the theoretical and practical concerns associated with the representation and analysis of geographic phenomena using computer technology. Geography majors must take 418a and 418b concurrently. Others may take an approved alternative course in another department as a substitute for 418b. Prerequisite: 310 or consent of instructor.

418B-1 Introduction to Geographic Information Systems Laboratory. A laboratory-based class that introduces students to the use and application of geographic information systems (GIS) technology in geography. Students explore the utility of GIS through team-based projects that provide hands-on experience with commonly used GIS hardware and software. Geography majors must take 418a and 418b concurrently. Others may take an approved alternative course in another department as a substitute for 418b. Prerequisite: 310 or consent of instructor.

420-3 Advanced Geographic Information Systems. Advanced concepts and techniques for computer-based analyses of geographic information. Students will be expected to develop individual problem-driven projects that use the knowledge, tools and techniques that are developed in this course. Two hours of lecture, two hours of laboratory each week. Prerequisite: 418a and 418b or consent of instructor.

421-2 Urban Geography. Examination of extracity relationships — theory and structure; intra-city relationships — theory and structure, and selected urban problems. Offered once annually. Prerequisite: 300 or consent.

422-4 Economics in Geography and Planning. Concepts, symbols, language, theory, and elementary mathematics of economics and geography. Individual's preferences, production functions, the firm, markets, optimality, externalities, and welfare economics. Elementary mathematics of time and intertemporal criteria. Prerequisite: 304 or consent of instructor.

424-4 Natural Resources Planning. Analysis of the human, technological, environmental and political dimensions of sustainable development focusing on public and private sector institutions that manage renewable and non-renewable natural resources. Prerequisite: 422 or Agribusiness Economics 440, or consent of instructor.

425-4 Water Resource Planning Simulation. A review of water resource planning theory and practice from a physical, technological, economic, social, and geographical viewpoint. Students design a comprehensive water resource plan including flood control, water supply, water quality, and recreation for a city of 175,000 population. This plan is played against a 50-year trace of hydrologic parameters in a computer simulation. Prerequisite: 424 or consent.

426-4 Administration of Environmental Quality and Natural Resources. (Same as Political Science 445.) An examination of institutional arrangements and administrative practices in the protection and use of land, water, air, and mineral resources. The course includes analysis of responsibility and decision-making at all levels of government (federal, state, and local) as well as corporate, interest group, and individual responses to public programs. Particular attention will be given to administration of federal environmental quality legislation including the National Environmental Policy Act, the Clean Air Act, the Water Pollution Control Act, and the Surface Mining Reclamation Act. Prerequisite: 300 or 326, or consent of instructor.

427-3 Environmental Perception and Planning. Deals with a description and assessment of the relevance of normative and descriptive theories of decision-making and theories of choice for public policy and environmental management. Studies of the perception of urban environments and other landscapes such as wilderness areas, and perception of and human response toward natural hazards will be considered. Prerequisite: 300 or consent.

430-3 Environmental Systems Analysis. Exploration of the major environmental systems relevant to environmental planning. Topics include concepts of systems and system behavior; basics of systems analysis and modeling environmental systems; environmental fluxes of energy and materials (e.g., hydrologic cycle, carbon cycle, energy budgets, erosion and sediment transport, role of biosphere in organizing fluxes); environmental variability. Prerequisite: 302 or consent.

432-4 Physical Environments of Cities. Energy and moisture budget concepts are developed from basic principles. Microclimatic data, instrumentation and applications stress urban examples. Models of climatic effects

and modeling of people's effects concern city climates mainly. Charge not to exceed \$5 for field trips. Prerequisite: 302 or 430 or consent.

433-3 Advanced Physical Geography. Topics may include landforms, climate, soil or water. Varies with the interest of the instructor. Prerequisite: 302 or consent.

434-4 Water Resources Hydrology. Microclimatic factors which affect the hydrologic events of various climatic regions are treated extensively. Methods of estimating geographic variations in hydrologic relations to climatic and microclimatic especially evapotranspiration, are compared and evaluated. Consequences of alternative land uses on climate and hydrology are considered regionally. Charges are not to exceed \$10 for field trips. Prerequisite: 302 or 430 or consent.

435-3 Energy Planning. Regional and national differences in energy supply and demand are reviewed followed by a study of current energy resources, the range of demands and environmental impacts. National and international planning strategies for dealing with changes in energy demand and supply are explored and assessed for present and future implementation probability.

436-3 Environmental Disaster Planning. Develops the skills and perspectives needed to plan effectively for natural and man-made disasters. The concepts of risk analysis, hazard mitigation and preparedness, response and recovery of the economic and social infrastructure in areas impacted by earthquakes, floods, droughts, radioactive and toxic material releases, and other catastrophic events.

438-3 Applied Meteorology. Analysis of meteorological patterns approached through study of several case histories. Evaluation of meteorological data, air mass and frontal analysis, development of weather forecasts, study of meteorological instruments, clouds, and precipitation patterns. Charges not to exceed \$5 for field trips. Prerequisite: Geography 303i or consent of instructor.

439-3 Climatic Change – Inevitable and Inadvertent. The geologic time-scale perspective of major natural events that have affected the theoretical steady-state climate, and factors in contemporary societal practices that have brought about inadvertent climatic modification. An assessment of the means and extremes of parameter values in the geologic time-scale perspective studied will be compared with the documented and present-day climatic parameter means and extremes. Approaches to prognoses for the Earth's future climatic state will be made. Charges not to exceed \$10 for field trips. Prerequisite: 331, Geography 303i, or consent of instructor.

440-2 Tutorial in Geography. Prerequisite: geography major, senior standing.

443-3 Teaching of Geography. Presentation and evaluation of methods of teaching geography. Emphasis upon geographic literature, illustrative materials, and teaching devices suitable to particular age levels. Charges not to exceed \$3 for field trips. Prerequisite: 300.

452-3 Environment and Population. Introduction to population geography. Emphasis is on the relationships between population trends, resource use patterns and environmental impacts. Topics include methods and data used to describe and predict populations, theories of population and policy issues that relate to the interaction between population, quality of life and environment quality. Prerequisite: 320 or consent of instructor.

454-3 Conservation and Environmental Movements. Emphasizes the ways in which humans view and interact with the environment. Conservation literature and the works of influential environmentalists are studied. Specific theories and environmental movements which help to explain society's current perception and use of the environment are studied. Prerequisite: 320 or consent of instructor.

456-3 Community Development Perspectives on Environmental Problems. Introduction to community development, a participatory strategy to social problems; grassroots, community based and non-governmental organizations as catalysts of development in the Third World, the environments in which they function, their ideologies, their methods and their effectiveness. Issues of popular participation in development provide the continuity in the course.

458-3 International Environmental Movements and Organizations. International environmental movements and organizations, e.g., the Greens, the United Nations; their approach to environmental issues, their organizational and communication patterns; their relationship with national governments and their impact on environmental policy at national and international levels. Prerequisite: 424 and 454, or consent of instructor.

459-3 Culture, Political Economy and Sustainable Development. An examination of: (1) the interaction of the elements that have shaped human actions towards environment in the modern period and which also account for most of the conflicts over the uses, use values and values of environment; (2) the effects of conventional development practices on particular populations, such as women and indigenous peoples; and (3) alternative development policies and the idea of sustainable development. Prerequisite: 424 and 456 or consent of instructor.

470-3 Interdisciplinary Approaches to Environmental Issues. Application of concepts for the Biological, physical and social sciences, economics, humanities and law, are used to understand the interdisciplinary complexities of environmental issues. Students will develop and demonstrate problem-solving skills as part of a team analyzing a regional environmental issue. Team-taught seminar style discussions. Prerequisite: Plant Biology 301i and admission to Environmental Studies minor program.

471-3 Environmental Impact Analysis. Techniques of assessing the impact of human activities on the environment, including weighting schemes, cost-benefit analysis, linear programming, ecological impact assessment. Emphasis is on placing NEPA and EIS writing in legal, economic, and environmental perspective. Prerequisite: 302 or 304 or consent.

475-3 Natural Resources Analysis Techniques. A study of procedures, analytical techniques, data sources and other aids for management and planning of environmental and other natural resources. Topics include techniques to promote public involvement in decision making, survey research methods, socio-economic forecasting methods, decision support techniques and project impact evaluation. Prerequisite: 410 and 422 or consent of instructor.

480-3 to 6 Internship in Geography. Supervised field work in private or public organization dealing with planning, environmental management, or cartography and geographic information management. A written proposal about the planned internship must be submitted to a faculty supervisor prior to beginning of internship. A faculty supervised report on the work is required after the internship. Courses may be repeated, but no more than 3 credit hours may be applied to an undergraduate major. A graduate student may enroll for 3 credit hours. Prerequisite: geography major and consent of department.

481-6 to 12 Cooperative Work Experience in Geography. Placement of advanced undergraduate or graduate student in private or public organization for one or more semesters in paid career-related position. Student gains professional experience, under faculty and on-site supervision. A written proposal about the planned cooperative work experience must be submitted to a faculty supervisor before it begins. A report summarizing the work experience is required after the work experience ends. Course may be repeated. Three credit hours may apply toward requirements for a Geography major; three additional credit hours may apply toward degree requirements as elective. Prerequisite: geography major and consent of department.

487-6 (1,2,3) Honors in Geography. (a) honors tutorial; (b) honors reading; (c) honors supervised research. Must be spread over the last two years of the undergraduate's career. May be taken in either a, b, c, or b, a, c sequence. Prerequisite: consent of department.

490-2 to 4 Readings in Geography. Supervised readings in selected subjects. Prerequisite: geography major, advanced standing.

Geology (GEOL)

Courses with a laboratory may require purchase of a laboratory manual and a supply fee. All courses requiring field trips may have a field trip cost of approximately \$2 to \$7.

110-3 Geology and the Environment. (University Core Curriculum) Examines human interaction with geologic processes and hazards, including earthquakes, volcanoes, landslides and flooding; occurrences and availability of geologic resources, such as energy, water and minerals; and land-use planning waste disposal and environmental impact. Two lectures and one laboratory per week.

220-3 The Dynamic Earth. Introduction to the materials which form the Earth and the dynamic processes that change them. Three lectures per week. One Saturday field trip required. Prerequisite: high school or college chemistry; concurrent enrollment in 223 encouraged for Geology majors.

221-3 Earth Through Time. Concepts and methods of interpreting Earth history. Development of Earth's major features and environment systems. Emphasis on ancient environments and life forms, major changes in paleoclimate, paleocommunities and biodiversity.

223-1 Introductory Geology Laboratory. Understanding the Earth's processes, materials and environment through hands-on laboratory and field experience. One three-hour session per week. Prerequisite: completion of or concurrent enrollment in 220.

224-1 Earth Through Time Laboratory. Concepts and methods of interpreting Earth's history. One two-hour laboratory per week. Weekend day field trip required. Prerequisite: completion of or concurrent enrollment in 221.

302-4 Fundamentals of Structural Geology I. An introduction to structural geology including a study of the forces involved in the deformation of the earth's crust, with special emphasis on the recognition and interpretation of the resultant geologic features. Laboratory and two Saturday field trips required. Prerequisite: 220, Mathematics 111. Recommended: Physics 203, or 205 or concurrent enrollment.

310-4 Mineralogy. Rudiments of crystal structure, morphology and symmetry. Introduction to crystal chemistry. Study of the properties, chemistry, occurrence and identification of common rock-forming and economically important minerals. Lecture-laboratory. Prerequisite: 220, Chemistry 200, 201, 210, 211.

315-4 Igneous and Metamorphic Petrology. An introduction to the processes involved in forming igneous and metamorphic rocks, to the geological environments in which these rocks are located, and to their characteristics and classifications. Laboratory. Field trip required. Prerequisite: 310.

325-4 Sedimentology and Stratigraphy. The characteristic features of sedimentary rocks and the physical and chemical processes responsible for their origin and diagenesis. The classification of stratigraphic units, methods of correlation, and paleogeologic reconstruction. Laboratory and field trips required. Prerequisite: 220, 221, 310; 415 recommended.

390-3 Introduction to Mining Geology. Structure and composition of the earth as these impact specifically on mining engineering problems; geologic time, sequence of events, major geologic provinces, types of ore deposits, use of core data, preparation and interpretation of geologic cross-sections. Two lectures and one three-hour laboratory. Two Saturday field trips required. Prerequisite: 220.

412-3 Topics in Igneous Petrology and Geology. In-depth studies of selected topics in igneous petrology and igneous geology. The selected topics will emphasize theoretical considerations, experimental considerations, and field associations of a variety of igneous rock types. Lecture, discussion sessions, and laboratory. Prerequisite: 315, 415.

413-3 Quantitative Methods of Geology. An introduction to quantitative methods in a geological and earth sciences context. Topics introduced include sampling plans for geologic studies, non-parametric test of geological data, comparisons of geological samples, analysis of sequential geological data. Laboratories will deal with numerical examples from all areas of geology. Prerequisite: advanced standing and consent of instructor.

414-3 Paleobotany. (See Plant Biology 414.)

415-3 Optical Mineralogy. The optical properties of minerals and the use of the petrographic microscope for identification of crystals by the immersion method and by thin section. Lecture, laboratory. Prerequisite: 310, Physics 203b or 205b.

417-3 Isotope Geochemistry. Stable and radioactive isotopes and the applications of isotopic studies to igneous and metamorphic petrology, ore deposits, sedimentology, surface processes, geothermometry, and geochronology. Introduction to isotopic techniques and mass spectroscopy. Laboratory or research project required. Prerequisite: 310, 315, and 325 or consent. Recommended: Physics 203, Mathematics 150, and Geology 419.

418-3 Low Temperature Geochemistry. The application of chemical principles to geologic processes that occur on and near the earth's surface. Lecture, laboratory. Prerequisite: 310, Chemistry 200, 201, 210, 211 or equivalent.

419-4 Ore Deposits. The geological and other factors that govern the exploration for and occurrence of metaliferous mineral deposits. Study of the geological settings of the major types of ore deposits. Lecture, laboratories, and field trips. Prerequisite: 302, 315.

420-3 Petroleum Geology. The geological occurrences of petroleum including origin, migration, and accumulation; a survey of exploration methods, and production problems and techniques. Laboratory study applies geological knowledge to the search for and production of petroleum and natural gas. Prerequisite: 221, 302.

421-3 Organic Geochemistry. The nature, origin and fate of natural and artificial organic materials in rocks and sediments. Topics include characterization of fossil fuels using biological marker compounds, petroleum source rock evaluation, and organic pollutants in the environment. Prerequisite: 325 or consent of instructor.

425-4 Invertebrate Paleontology. Principles of paleontology and a survey of the important invertebrate phyla and their fossil representatives. Laboratory. Field trips required. Prerequisite: 221, a biology course.

428-3 Paleocology and Environments of Deposition. Characteristics, distribution, and classification of recent and ancient environments. Criteria for recognizing ancient environments. Sedimentological and paleoecological approaches. Recognition of ancient environments and environmental associations. Laboratory. Field trips required. Prerequisite: 425, 325, or concurrent enrollment.

434-3 Engineering and Environmental Geophysics. Geophysical methods used in engineering and environmental site characterization and assessment and the geophysical detection of environmental hazards. Field trips required. Prerequisite: Physics 203a or 205a, 203b or 205b, Mathematics 150.

435-3 Solid-Earth Geophysics. Earth's size, shape, mass, age, composition, and internal structure are reviewed in detail as understood from its volcanism, gravity and magnetic fields, seismicity, and motion of continents and ocean basins; plate tectonics. Prerequisite: 302, Mathematics 150, or consent of instructor.

436-4 Elementary Exploration Geophysics. Theory and practice of geophysics as applied to the exploration and development of natural resources. Laboratory involves use of geophysical instruments and interpretation of data. Field trips required. Prerequisite: 220, Mathematics 150.

437-3 Field Course in Geophysics. Use of geophysical equipment for collection, analysis and interpretation of seismic, gravity, magnetic, electrical, and other types of geophysical data. Prerequisite: 436 or consent.

440-1 to 4 Advanced Topics in the Geological Sciences. Individual study or research or advanced studies in various topics. Prerequisite: advanced standing and consent of instructor.

445-3 Museum Studies in Geology. History, nature and purpose of geology in museums, relationships of geology to other museum disciplines, application of geologic methods to museum functions, preparation and preservation of specimens; nature, acquisition and utilization of geologic collections in museums, role of research in museums.

450-2 Introduction to Field Geology. Introduction to field techniques, principles of geologic mapping and map interpretation. Field trip fee \$5.00. Prerequisite: 302, 315 or concurrent enrollment.

454-6 Field Geology. Advanced field mapping in the Rocky Mountains, including problems in stratigraphy, structure, petrology, paleontology, geomorphology, and economic geology. Transportation cost approximately \$150, supplies \$6. Prerequisite: 302, 315; 450 recommended.

460-3 Geological Data Processing. Computer applications to geological problems including the processing and programming of data and the interpretation and evaluation of results. Lecture, laboratory. Prerequisite: Engineering 222 or Computer Science 202.

462-3 Fundamentals of Structural Geology II. Intermediate topics in structural geology including strain theory, field strain analysis, geometry of complex mesoscopic structures and introduction to dislocations, deformation history, and microfabric analysis. Hypotheses and orogenesis are discussed and evaluated. Lecture and assigned problems only. Prerequisite: 302 or equivalent.

466-3 Tectonics. Fundamentals of geodynamics applied to plate tectonics: mantle composition and rheology, deformation of the lithosphere, structural characteristics of plate margins, stability of triple junctions, diachronous tectonics, and orogenesis will be examined in detail. Prerequisite: 302, Mathematics 150, or consent of instructor.

470-3 Hydrogeology. A problem-solving oriented course which covers the analysis and interpretation of the distribution, origin, movement, and chemistry of ground water. Laboratory. Prerequisite: 220, Mathematics 250.

474-3 Geomorphology. Study of erosional and depositional processes operating at the earth's surface and landforms resulting from these processes. Relationship of processes and landforms to the geologic framework is examined. Laboratory. Prerequisite: 220.

476-3 Quaternary Geology. Methods used to identify, map, date and correlate Quaternary deposits and interpret Quaternary history. Covers glacial, fluvial, coastal, lacustrine and eolian chronologies, oxygen-isotope records from ocean sediments and continental ice cores, volcanic activity, and Quaternary climate change. Field trips required. Prerequisite: 220, 221 or consent of instructor; 474 recommended.

478-4 Environmental Geology. Application of principles of geomorphology and Quaternary to environmental problems and geologic hazards. Lectures and case studies emphasize neotectonics, volcanic hazards, landslides and other mass movements, floods river channel changes, and coastal erosion. Laboratory exercises focus on techniques for identification, mapping, and analysis of geologic hazards. Prerequisite: 474; 476 recommended.

480-3 Geology of Coal. Geology as related to exploration, development and mining of coal; stratigraphy, sedimentation and structure of coal deposits; type of coal basins and their tectonic setting; concepts of cyclical deposition in coal basins; origin of splits and partings in coal seams; relationship of modern environments and ancient coal-forming environments; structural problems relevant to exploration and mining of coal; methods of resource evaluation. Three 1-hour lectures/week; five half-day field trips.

481-3 Sedimentary Basin Analysis. The use of stratigraphy, structure, sedimentology and geophysics to determine the paleogeographic evolution of sedimentary basins. Topics include the study of the relationships between host strata and both primary and post-depositional non-renewable resources, plate tectonics and basin evolution and subsurface geologic methods. Prerequisite: consent of instructor.

482-3 Coal Petrology. Structural features and microscopy of coal seams. Origin and alteration of coal constituents. Includes field trips, study of coal specimens, and techniques. Prerequisite: 220 and 221 or consent of instructor.

490-1 to 3 Internship. Credit for supervised practical experience with an external geological agency or company; prior approval of the sponsoring agency and the department is required. Not for graduate credit. Prerequisite: advanced standing; minimum 2.70 cumulative gpa.

German (GER)

126-8 (4,4) Elementary German. The course emphasizes German culture as it is expressed in the language. It concentrates on the four language skills of understanding, speaking, reading, and writing. No previous knowledge of German required. Must be taken in a,b sequence. Purchase of a workbook is required.

201-8 (4,4) Intermediate German. Intensification of the four basic language skills. Study of the culture and everyday living situations in the German-speaking countries. Must be taken in a,b sequence. Prerequisite: 126b or equivalent.

201C-6 (3,3) German Language Workshop. This intensive (15 days), total-immersion (exclusively in German) program combines formal classwork with informal seminars, group activities (folk singing, skits, play readings, films, talent shows, etc.) and individual assignments (daily compositions, diaries). May be repeated once but only three hours will count toward major or minor. Prerequisite: 201b or consent of instructor.

202-2 (1,1) Intermediate German Conversation. Designed to improve the student's speaking ability through use of modern media. Must be taken in a,b sequence or as companion course to 201a or b or with consent of instructor. Prerequisite: 126b or equivalent.

320-7 (4,3) Advanced Composition and Conversation. Devoted to increasing the student's command of German. Intensive practice in oral and written composition. Beginning with rather controlled subject matter and progressing to a wider choice of topics. Conducted primarily in German. To be taken in sequence. Prerequisite: grade of B or better in 201b or permission of instructor.

330-3 Introduction to German Literature. Survey of masterpieces of German literature including works from various genres and from the major periods of German literary history. Student projects will include demonstration of various techniques of literary criticism. Course is taught primarily in German. Prerequisite: 201b or equivalent.

335-3 Survey of German Literature. A survey of German literature from its beginning in the early Middle Ages to the present. Focusing on the major periods, authors, and works of German literature, this course will provide the students with an initial encounter with literature in an historical context and help train them to read both extensively and intensively. Prerequisite: 201b or equivalent.

345-3 Introduction to Business German. An overview of the business communities of Germany and Austria with respect to communications, trade, industry, government, the European Union, culture and the educational system. Prerequisite: 320a or concurrent registration.

370-3 Contemporary Germany. Study of life in Germany since World War II including the customs and habits, thoughts and beliefs, as well as the broad complex of traditions basic to everyday life. Readings include literary and journalistic materials as well as written and filmed documentaries. Taught primarily in German. Prerequisite: 201b or equivalent and/or consent of instructor.

371-3 Cultural History of Germany. An overview of geographic facts and the intertwining economic, political, social, and cultural developments in the German-speaking countries from the time of the Germanic tribes to the present. Taught primarily in German. Prerequisite: 201b or equivalent.

380-3 Modern German Prose. Introduction to outstanding German prose literature of the 19th and 20th centuries. Attention to historical and social backgrounds. Extensive readings supplemented by lectures and discussions. Conducted in German. Prerequisite: 201b or equivalent.

390-1 to 6 (1 to 3, 1 to 3) Directed Language Learning Activity. Special projects such as translation practicum, German play production, German newsletter, instructional assistance, special presentations, or internship in a business firm in Germany. May count as the fifth semester required for Foreign Languages and Literatures 475a. Prerequisite: consent of instructor.

410-3 Advanced Language Study. Designed to improve language skills beyond the level of 320. Selected grammar review and intensive practice in effective use of written and spoken language through translations and free compositions. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: 320b or equivalent.

411-3 Linguistic Structure of Modern German. (Same as Linguistics 409.) The descriptive study of phonology, grammatical structure, and vocabulary of modern German with consideration of its structural differences from English and application to teaching. Appropriate for students with at least two years of German. Conducted in English.

412-3 History of the German Language. Development of German from its Indo-European origin to the present in political and cultural context. The main linguistic aspects dealt with are lexical and semantic changes. Appropriate for students with at least two years of German. Readings in German. Conducted in English.

435-3 Business German. An overview of German business, presented through lectures, readings, and discussions. Coursework with textbook and supplementary materials will focus on the major aspects of German business. Exercises will include vocabulary building, listening and reading comprehension, oral and written summarization, role playing in typical situations, mock telephone conversations, and business correspondence. Prerequisite: 320b or consent of instructor.

440-3 Studies in Early German Literature. The literature of the German-speaking countries from the early Middle Ages through the seventeenth century, with varying emphasis on authors, themes, genres, periods. Prerequisite: 330 or 335, consent of instructor, or graduate standing.

450-3 Studies in 18th Century Literature. Examination of the major writers and movements with their social, historical, and intellectual background during the 18th century in Germany and Austria. Prerequisite: 330 or 335, consent of instructor, or graduate standing.

455-3 Studies in 19th Century Literature. Detailed focus on specific aspects rather than a general survey of 19th century literature, e.g., major periods and movements, or major genres and sub-genres, or major and representative authors. Prerequisite: 330 or 335, consent of instructor, or graduate standing.

480-3 Studies in 20th Century Literature. Detailed focus on specific aspects rather than a general survey of 20th century literature, e.g., major periods, movements, and tendencies, or major genres and sub-genres, or major and representative authors. Prerequisite: 330 or 335, consent of instructor, or graduate standing.

488-3 Advanced German as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for reading and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of B or A, satisfies graduate program requirement for foreign languages as a research tool. Prerequisite: Passing of CLEP test in German; or one year of college-level German; or consent of instructor (as determined by examination).

490-1 to 6 (1 to 3, 1 to 3) Independent Study in German. Project-study under supervision of German faculty. Amount of credit depends on scope of study. May be repeated as the topic varies, up to the maximum of six semester hours. Prerequisite: senior or graduate standing and approval of supervising instructor.

493-3 to 9 (3 per topic) Seminars in Special Topics in Literature and Language. Topics vary and are announced in advance; both students and faculty suggest ideas. May be repeated as the topic varies. Primarily for undergraduates. Prerequisite: consent of instructor.

Health Care Management (HCM)

258-1 to 30 Work Experience Credit. Credit granted for job skills, management-worker relations and supervisory experience for past work experience while employed in industry, business, the professions, or service occupations. Credit will be established by departmental evaluation. Prerequisite: health care professions majors.

259-1 to 60 Occupational Education Credit. A designation for credit granted for past occupational educational experiences related to the student's educational objectives. Credit will be established by departmental evaluation. Prerequisite: health care professions majors.

298-1 Multicultural Applied Experience. (Multicultural Applied Experience Course) An applied experience, service-oriented credit in American diversity involving a group different from the student who elects the credit. Difference can be manifested by things such as age, gender, ethnicity, nationality, political affiliation, race or class. The student can sign up for the one credit experience in the same semester he or she fulfills the multicultural requirement for the University Core Curriculum or the credit can be coordinated with a particular core course on American diversity, although neither is a requirement. Students should consult the Department of Health Care Professions for course specifications regarding grading, work requirements and supervision. Prerequisite: Health Care Professions major only and junior standing.

350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. This course may be classified as independent study. Prerequisite: consent of instructor.

360-3 The U.S. Health Care System. A study of the major components which comprise the U.S. health care system. This course will focus primarily on basic terminology, history, settings, personnel and utilization of services.

364-3 Health Care Supervision. A course dealing with the problems of management of the small working unit (division, department, section, etc.) within a larger health care agency. Included items will be unit goals, identification of problems, staffing needs, monitoring of work progress, unit communications and interpersonal relations within the unit. Prerequisite: health care professions majors.

365-3 Data Applications for Health Professions. A course designed for students beginning their major in health care to examine and apply data to their profession. Emphasis will be placed upon the understanding of the basic principles, techniques and applications involved with analysis, synthesis and utilization of data. Prerequisite: Mathematics 108 and health care major.

366-3 Technical Information for Health Managers. A course designed to increase student competence in utilization and analysis of the various types of technical information encountered in the health professions. Prerequisite: health care professions majors only.

380-3 Seminar in Health Care Services. Seminar on the various existing and emerging issues which affect control and implementation of health care services to consumers. Topics include but are not limited to ethics, professionalism, credentialing, marketing, and future trends. Senior status or consent of instructor is required for registration.

381-3 Health Care Management. A study of the principles of effective management techniques including planning, decision making, organizing, budgeting, communication, and direction.

382-3 Health Economics. An analysis of the economics of health care in the United States and its effect on society and the health care profession.

384-3 Equipment and Materials Management in Health Facilities. A focus on the preparation of health care administrators with the necessary management tools to assure comfort, safety, and well-being of patients, hospital personnel, and visitors, and to focus their attention on sound maintenance management practices, materials procurement, storage and preservation, records keeping, and the utilities systems needed in a health care facility.

385-3 Fiscal Aspects of Health Facilities. An introduction to the fiscal problems encountered in the administration of health care facilities.

388-3 Legal Aspects of Health Care. A study of the legal requirements affecting health care facilities. The course will emphasize the basic law of contracts, consents, records, personnel, liabilities, privacy, and other routine functions. Successful students acquire an understanding of the need for legal counsel. Lecture three hours.

390-3 Labor/Management Relationships. The student will gain a general understanding of labor and management relationships as they apply to the health care setting. The student will develop a perspective on the evolution of health care labor relations in the United States economy and how the interaction of labor and management differs throughout the world and work setting. The student will be introduced to collective bargaining as it applies to both health care providers and support personnel. Prerequisite: health care professions majors only.

398-3 Risk Management in Health Care Organizations. A study of the process and principles of risk management in health facilities. This course demonstrates methods used in controlling, reducing, or eliminating financial loss in health care facilities due to employee negligence, medical mal-practice, workman's compensation and property loss. It examines pertinent legal principles, occupational health and safety, insurance, and related case studies. Prerequisite: junior standing and permission of instructor. Restricted to Health Care Management majors.

413-3 Nursing Home Management. A study of the principles of nursing home management which examines administrative and staffing functions relating to clients, community, public policy, programming, and financing. Not for graduate credit. Prerequisite: junior standing or consent of department.

421-3 Professional Practice in Health Care Management. Introduces the students to topics of professionalism, with emphasis on the elements involved in obtaining a position within the health care industry and professional ethics. Job development activities will include: personal inventories, placement services, interviewing techniques, resumes, letters of application, references and employment tests. Each student will develop a portfolio of professional information related to career goals. Students will also develop an approach to ethical problems from Who Am I? to the types of ethical problems in health care and how to apply decision making principles. Prerequisite: enrollment in College of Applied Sciences and Arts baccalaureate program or consent of instructor.

422-1 to 12 Occupational Internship. Each student will be assigned to a University approved health care organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the preceptor or coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be arranged individually. Mandatory Pass/Fail. Not for graduate credit. Prerequisite: Health Care Management 421 and a minimum grade of C in all Health Care Management courses.

Health Education (HED)

101-2 Foundations of Human Health. (University Core Curriculum) This course is designed to examine contemporary health-related issues for all dimensions of the individual — physical, mental, social, emotional and spiritual — through focus on health promotion and disease prevention. Emphasis is placed on maintaining or improving quality of life by developing personal and social skills (decision-making, communication, stress management, goal setting) across health education content areas, as well as identifying and accessing appropriate health-related resources.

301-3 Advanced Concepts of Health. Interrelatedness and interdependence of health as a total concept. Concepts of health and health education within the context of an option-expanding world are examined. Emphasizes role of the individual in assuming responsibility for one's own health behavior as well as education for a health-activated citizenry.

302S-3 Driver and Traffic Safety Education — Introduction. A beginning course that deals with the highway transportation system, traffic problems, the driving task, perception and implementation of the driver education classroom program. Observation of the teaching environment is included. Prerequisite: a valid driver's license.

305-3 Principles and Foundations of Health Education. An introductory professional course in the field, designed to implement the evolving concept that health education is both content and process; major concepts for a variety of teaching-learning approaches in school and other community settings are considered; health careers and opportunities in field are described.

310-6 Emergency Medical Technician. Upon successful completion of a national examination, meets the formal requirements and certification for those who want to become an Emergency Medical Technician. The course is concerned with cognitive and practical experiences. Triage, vehicle extrication, emergency room observation, and driving an ambulance experiences conducted outside the normal class meeting times are required. Students will be required to pay a laboratory fee of approximately \$25. Prerequisite: restricted to written consent of course coordinator.

311-3 Human Growth and Development. An overview of human development from conception through senescence. Designed for professional personnel who will be concerned with planning health programs for groups representing broad age ranges. Emphasis will be on physical, mental, and social dimensions of growth and development.

312-3 Emotional Health. Concepts of positive emotional development in terms of influence in the classroom and other community settings.

313S-3 Introduction to Safety Education. Introduces the principles and fundamentals of safety education. Concerns safety as a social problem and considers major accident areas, accident causes, liability, and analyzes possible solutions to accident problems.

326-3 Evaluation in Health Education. Principles and methods for monitoring the implementation of health education and for assessing its impact. Development and selection of valid and reliable measures. Use of standardized scores and other appropriate statistics. Applications in classroom and community settings.

330-3 Consumer Health. Federal and state legislation affecting consumer health; official watchdog agencies on consumer health; non-official agencies (AMA, CU, etc.); health and advertising in health and medicine; cultists' and faddists' effect on consumer health.

334-3 First Aid and CPR. Provides students with first aid and cardiopulmonary resuscitation knowledge and skill competencies necessary to care for injuries and provide assistance in emergencies. The course can lead to certification in American Red Cross Standard First Aid Responding to Emergencies (RTE) and Cardiopulmonary Resuscitation. American Red Cross services and materials fee payable to local Red Cross chapter collected in class. Students will be required to pay a laboratory fee of \$5.

350-3 Health Education in the Elementary School Curriculum. Acquaints the prospective teacher in the elementary school with fundamental processes, techniques and instructional materials related to health education.

355-3 Introduction to Community Health. Organization and administration in local, state, and national official and non-official health agencies, their purposes and functions, and an overview of methods for meeting community health needs and for solving community health problems.

400E-2 to 3 Health Appraisal of School Children - Special Topics. Includes the screening, testing, and evaluation for numerous health conditions related to hearing, vision, the cardiovascular system, skin, spine, and such diseases as diabetes, tuberculosis, herpes, and other such ailments. Included will be classroom lectures and presentations, a supervised practicum, and all students will develop a viable program in a particular problem area in a public school program.

401-3 Epidemiological Approaches to Disease Prevention and Control. Principles and practices in the cause, prevention, and control of diseases in various community settings.

402-3 Death Education. Designed to prepare educators to conduct learning experiences about death and dying in a variety of school, college, medical care, and community settings. Stress will be placed on developing brief, functional curricula and usable, imaginative teaching-learning materials, and on evaluating resource materials for use in educating at various levels of maturity.

403-3 Health Advocate Training. Provides students with knowledge and skills in the areas of peer health education, health advocacy, and referral. Instruction includes health care information from a wellness point of view. Prepares students for practicum in health advocate program. Credit will not count toward a master's degree in health education. Prerequisite: consent of instructor.

405-3 Sex Education. Examines various programs of sex and family life education in schools, recognizing a range of community attitudes.

407-3 Drug Education. Meets requirements of Illinois state law for education concerning drugs including alcohol for grades K-12. Explores motivations behind use and abuse of drugs. Offers experiences in development of curriculum and teaching approaches and material.

410-3 Human Sexuality. Provides detailed in-depth information on such topics as philosophical views of sexual behavior, sex techniques, sex therapy, sexual variations, sexual anatomy and physiology, including the sexual response and changes with age and sexual development in childhood.

411-6 Emergency Medical Technician in the Wilderness. Placement of trained emergency medical technicians into a wilderness situation and having them adopt previously learned skills and newly developed skills. Prerequisite: 310 or 434.

430-3 Health and Injury Control in A Work Setting. (Same as Industrial Technology 430.) Assesses the health and injury control programs present in a work setting. Emphasis given to employee programs in health, wellness, and injury control that are effective. Field trips to work sites are included.

434-4 Advanced First Aid and Emergency Care. Meets the needs of those in positions where a complexity of first aid emergency care procedures are needed. American Red Cross and American Heart Association certification may be obtained. Materials purchased from the American Red Cross and/or the American Heart Association are required in this course. Consent of instructor required.

440-3 Health Issues in Aging. Students enrolled in the course will be involved in a wide variety of learning activities focusing on health needs of the elderly. The course is designed for students who have a special interest in health implications of aging.

441-3 Women's Health. The course deals with a wide variety of health concerns of American women as consumer in the current health marketplace. Major categories of topics include health products, health services, and sources of health information of particular interest to women. Emphasis is also placed on current health related issues of women. The major purpose of the course is to provide a basis for informed decision-making by the female consumer.

442S-5 Driver and Traffic Safety Education – Practicum. Provides prospective teachers with simulation, range, and on-road teaching experience with beginning drivers. Students may be required to purchase materials not to exceed \$15. Prerequisite: 302s.

443S-3 Driver and Traffic Safety Education – Program Administration. Emphasizes administration, reimbursement, scheduling, public relations, planning, and evaluation of driver education. Prerequisite: 442s or consent of instructor.

444-3 Modern Gerontology. This multidisciplinary course in Gerontology is a survey of various disciplines which contribute to a body of knowledge vital to working, performing research, and teaching in an aging society.

445-3 Advanced Driver Education Instructor Training. Prepares prospective instructors of advanced driving techniques. Emphasis is placed upon safe driving practices, vehicle dynamics, emergency vehicle operation, in-car response to simulated driving emergencies, and instructional techniques. Prerequisite: consent of instructor.

446-4 Motorcycle Rider Education Instructor Training. Provides prospective teachers with on-cycle teaching experience with beginner riders. Addresses program administration, scheduling, public information techniques, equipment procurement, evaluation and instructional technology. Certification as Motorcycle Rider Course Instructor can be obtained. Materials purchased from the Motorcycle Safety Foundation are required in this course. Prerequisite: consent of instructor.

450-3 Health Programs in Elementary Schools. Orientation of teachers to health programs and learning strategies. Designed for elementary education majors.

455-3 Computer Applications in Health Education. Designed for students with little or no previous experience with computers. The course will be applications oriented, with an introduction to the potential uses of computers in the field of health education.

461-1 to 12 Health Education Workshop. A different focal theme each year; e.g., mood modifying substances, ecology, human sexuality, emotional and social health dimensions. Information, ideas, and concepts are translated into teaching-learning materials and approaches; continuing opportunity for interaction between prospective and experienced teachers.

470S-3 Highway Safety as Related to Alcohol and Other Drugs. Relationship between alcohol and other drugs and traffic accident causes. A review of education programs designed to minimize drug related accidents. Prerequisite: advanced standing or consent of instructor.

471-2 Health Education Instructional Strategies. This course is designed for graduate students who are teaching assistants in Health Education. The purpose of the course is to enhance professional skills of those who are responsible for teaching health education, general education, and first aid.

480S-3 Traffic and Driver Education Program Development. Acquaints students with curriculum innovation, current philosophy, learning and teaching theories, and instructional designs. Students will develop learning packages and modules. Prerequisite: 443s or consent of instructor.

483-3 Community Health Administration in the United States. Background and development of community health administration structures in the United States; the dynamics and trends evolving from current health and medical care programs and practices. Prerequisite: 355.

485-3 International Health. Health beliefs, values, and practices of peoples in various cultures as related to a total way of life of potential value to both prospective teachers and students in other fields.

488-3 Environmental Dimensions of Health Education. Application of the principles of learning to understanding people interacting with their environment. Emphasis placed upon individual and community responsibilities for promoting environmental health. Rural and municipal sanitation programs and practices are included.

489-3 Introduction to Vital Statistics. An introduction to bio-statistics; examination of theories of population projections; collection, organization, interpretation, summarization, and evaluation of data relative to biological happenings with emphasis on graphic presentation.

490-2 to 6 Field Experiences in School, Community Health or Safety Education. Field observation, participation, and evaluation of current school or community health education or safety programs in agencies relevant to student interests. Prerequisite: consent of instructor.

491-3 Health Teaching/Learning: School and Community. Teaching and learning strategies at secondary school levels and in other community group settings. Opportunities to examine and observe a variety of educational strategies applicable to health education.

496-4 Industrial Hygiene. Provides a background in the recognition, evaluation, and control of toxic materials and hazardous physical agents in the work environment. Prerequisite: consent of instructor.

499-3 Rx: Education in Health Care Settings. Designed for members and potential members of the health care team to explore educational concepts and strategies applicable to a variety of health care settings. Includes rights and responsibilities of consumer and professional, determinants of health behavior, contrasting models of health care, communication skills, media and materials and planning, implementing and evaluating educa-

tional programs. Open to medical and dental personnel, nurses, health educators, dieticians, therapists, pharmacists, social workers, and related professionals.

History (HIST)

101-6 (3,3) The History of World Civilization. (University Core Curriculum) (a) To Industrialization; (b) Since the Age of Encounter. A survey of various civilizations in the world from prehistory to the present with particular attention to non-western cultures.

110-3 Twentieth Century America. (University Core Curriculum) The history of the United States since 1900. Surveys cultural, social, economic and political development, with special emphasis on domestic pluralism and changing international roles.

112-3 The Twentieth Century World. (University Core Curriculum) The history of Europe, Asia, Africa and Latin America since 1900. Emphasis on political conflict, economic development, social change and cultural transformation in an increasingly integrated world.

201-3 Art, Music and Ideas in the Western World. (University Core Curriculum) The historical evolution of the visual arts, architecture and music in the context of society and literature, from ancient Greece to the present. It emphasizes the fundamental historical relationship of the different genres of human expression in Western culture.

202-3 America's Religious Diversity. (University Core Curriculum) An introduction to the basic concepts and histories of the world's religions and their place in American society. The purpose is to increase our understanding of cultural and religious diversity and how the various religious traditions inform our worldviews.

205-6 (3,3) History of Western Civilization. (a) From ancient times through the sixteenth century; (b) The seventeenth century to the present. A brief survey of the major developments and trends in European history from ancient times through the 20th Century.

210-3 American Heritages (University Core Curriculum) The American experience as expressed in key texts written prior to the Twentieth Century. Emphasis on American pluralism and controversies related to race, ethnicity, gender and class.

300-3 The Origins of Modern America, 1492-1877. A general survey of political, social, and economic development of the United States from 1492 to 1877.

301-3 Modern American from 1877 to the Present. A general survey of the political, social and economic development of the United States from 1877 to the present.

303-1 to 3 Topics in Comparative History. A comparative study of recurring themes in the history of diverse societies and civilizations. Topics will vary and will be announced in advance. Topics to be covered include the problem of slavery, technology and society, war, and civilization.

304I-3 Islamic Religion and Culture. (University Core Curriculum) Examines religious, cultural and socio-political developments in the Islamic world from the Prophet Muhammad to the present. Includes modernization and current problems in global contexts.

311-3 Ancient Civilizations. A comparative study of ancient near eastern and classical civilizations of the Fertile Crescent and the Mediterranean Basin: Mesopotamia, Egypt, Palestine, Greece and Rome.

315-3 Medieval Europe. The emergence of Europe from the Age of Constantine to the Black Death, with emphasis on the political, socio-economic, and cultural forces which were at work creating Europe.

320-3 Early Modern Europe. The development of Europe from the Renaissance through the Age of the French Revolution.

323-3 History and Artistic Creativity. A selected exploration of the specific conditions in Western history, from the Renaissance to the present, which have encouraged and given direction to creativity in the arts.

324-3 Women in Western Society: 1600 to Present. (Same as Women's Studies 348.) The legal, social, economic, and political position of women in Western society during the past 350 years are examined against the backdrop of industrialization, political democratization, world wars, and totalitarianism. Emphasis is on women in England, France, and the US.

325-3 Europe Since 1815. The development of Europe from the Age of the French Revolution to the present day.

330-6 (3,3) English History. (a) England to 1688; (b) England since 1688. Political, social, economic, and cultural history of England.

336-3 Twentieth-Century Dictatorships and Global Conflict 1919-1945. The emergence of the Axis dictatorships in Europe and the Far East, their ideology, expansion, aggression and their defeat in World War II.

338-3 Eastern Europe. An historical survey of the East European area from the Baltic to the Balkans, with emphasis on the modern era.

339-3 Twentieth-Century Russian Culture and Society. A survey of intellectual, literary and socio-economic trends in late imperial Russia and the Soviet Union. Discussion of the non-Russian peoples of the Empire and USSR and nationalism.

350-2 The Revolution and the Constitution in American History. An introduction to the causes and consequences of the American Revolution with special focus on the political principles contained in the Declaration of Independence and the Constitution and the effects these documents have had on American history.

354-3 The Contemporary United States. A survey of the social, economic, political and cultural changes in the United States since the end of World War II, focusing on such topics as the Cold War, changes in the lives of women and minorities, the Vietnam War, the social movements of the 1960s, the imperial presidency, and the Reagan revolution.

355-3 The Radical View in American History. A survey of American radicalism from the revolution to the present, with an emphasis on twentieth century movements for social change.

361-3 Race and History in the United States. (Same as Black American Studies 360.) This account of racial attitudes and race relations begins with the 16th century European racial experience and covers subsequent developments in the U.S. to the present time. The problem of race is treated in its several dimensions, but principal emphasis falls upon the historical consequences of Caucasian confrontations with blacks, Hispanics, and native Americans.

362-6 (3,3) Black American History. (Same as Black American Studies 311.) (a) Black American history to 1865; (b) black American history since 1865. The role of blacks and contribution in the building of America and their ongoing fight for equality.

364-3 The Great Depression in the United States. Causes and effects of the Great Depression and of governmental measures for relief, recovery, and reform during the years 1929-1942.

365-3 American Immigration. A history of American immigration and ethnicity from colonial times to the present, with primary attention upon the peoples of the United States and the diverse lands from which they have come.

366-3 American Indian History. A comprehensive history of American Indians from prehistoric times to the present.

367-3 History of Illinois. The history of the state from 1818 to the present.

369-3 History of the American Family. (Same as Women's Studies 346.) A survey of the American family from its origins to the present, focusing on the variety of families — English, African, later immigrants, middle class, and poor. During the course students will write their own family histories, thereby applying what they have learned to their own lives.

370-6 (3,3) History of Latin America. (a) Colonial Latin America. (b) Independent Latin America. An introduction to the political, economic, social, and cultural development of Latin America from Precolumbian times to the present.

380-6 (3,3) History of East and South Asia. (a) China and Japan; (b) India and Southeast Asia. The first semester focuses on China and Japan from early times to the present; the second semester concentrates on India and Southeast Asia in modern times.

385-3 Islam and the West. A history of the religious and cultural interaction between the Islamic and Western world. Surveys the changing image of Islam in western literature, the Muslim response to secularism, and the Islamic presence in Europe and America.

387-6 (3,3) History of Africa. (a) To 1800; (b) Since 1800. A chronological study of African peoples from earliest times to the present, including ancient Egypt, Ethiopia, the Era of the African Kingdoms, the role of Islam, the slave trade, African-European relations, colonialism, African nationalism and independence.

390-3 History in Fiction. A comparative study of fictional accounts and of analyses written by historians over selected periods or topics.

392-3 Historical Research and Writing. Methods of historical investigation, criticism and composition. Restricted to undergraduate majors in history. Fulfills the CoLA WAC requirement.

393-3 Twentieth Century Military History. An introduction to the problems of armed conflict throughout history with particular emphasis on the twentieth century and the transformation of warfare during the era of the World Wars. Prerequisite: sophomore standing or consent of instructor.

395-3 Honors. Great ideas and works of history, with discussion of conflicting interpretation of major historical problems. Prerequisite: junior standing and consent of department.

411-3 World of Ancient Greece. An investigation into the societies, cultures and governments of Greece and the Eastern Mediterranean from the time of the Trojan War to the conquests of Alexander the Great. The course will focus on primary sources and modern analyses pertaining to such issues as slavery, democracy, religion, Athenian imperialism and cultural difference.

412-3 World of Ancient Rome. An investigation into the society, culture and government of the Romans and the peoples they conquered from the time of Romulus and Remus to the barbarian invasions. The course will focus on primary sources and modern analyses pertaining to such issues as imperial expansion and decline, Roman law and politics, social conflict and cultural difference.

413-6 (3,3) Medieval Society. (a) The Early Middle Ages. A.D. 400-1000; (b) The Late Middle Ages, A.D. 1000-1400. An examination of the distinctive elements of medieval European civilization. The first semester will consider the transition from ancient to medieval society and the gradual development of a new social and economic regime. The second semester will be devoted to a study of the full development of that new regime, its flowering in the 13th century and the crisis of the 14th century.

418-3 Renaissance. The focus on the Renaissance in Italy and in particular on its relation to the social and economic context in which it developed. The spread of humanism and humanistic values to other areas of Europe will also be considered.

420-3 Reformation. Concentrates on the movement of religious reforms in the 16th Century. Emphasis on its roots in the past, particularly in earlier expressions of popular piety and to the wider social and political effects in the 16th and 17th centuries.

421-6 (3,3) Absolutism and Revolution: Europe 1600-1815. (a) 1600-1715; (b) 1715-1815. The development of enlightened despotism, the rise of the revolutionary movement, and the Napoleonic period.

422-6 (3,3) Intellectual History of Modern Europe. (a) 1600-1815; (b) Since 1815. The first semester will cover the Age of Reason, the Enlightenment, and Early 19th Century Romanticism. The second semester will cover the period from Marx and Darwin to the Contemporary World.

423-3 Diplomatic History of Modern Europe. A study of the European state system and the diplomacy of the major powers, with emphasis on events since 1870.

424-6 (3,3) Social and Revolutionary Movements in Nineteenth Century Europe. (a) 1815-1871; (b) 1871-1914. Changing social and political structure of Europe caused by the impact of industrialization and the French

Revolution. The consequences of these developments in terms of the emergence of new social forces and the development of movements for social and political revolution.

425-6 (3,3) Twentieth Century Europe. (a) Era of the World Wars; (b) Since 1945. Political, social, cultural and economic development of the major European states during the present century.

432-3 History of France. Social, economic, political, and intellectual evolution from medieval origins to the present day. French contributions to western culture.

433-6 (3,3) History of Germany. German state and society from antiquity to the present. (a) to 1866; (b) since 1866.

434-3 History of Scandinavia. Denmark, Norway, Sweden, Finland, and Iceland. Related history of the Baltic and North Sea regions, from prehistoric times to the present.

437-6 (3,3) History of Russia. (a) Russia from the beginnings to the 1860s: Kievan Rus, Muscovy, and Imperial Russia to the emancipation of the serfs; (b) Imperial Russia and the Soviet Union from 1865 to the present day. Emphasis on political history.

440-3 Tudor-Stuart England. England from 1485 to 1714. The social, economic and political development of Britain during the crucial two centuries from late feudal anarchy to world power.

442-6 (3,3) English History and Culture. (a) from 1660 to 1780; (b) 1780 to 1914. An examination of English society and values in novels, essays, memoirs and paintings. The first semester analyzes social and political stability, secularization, economic transformations, and foundations of empire. The second semester investigates industrialization, urbanization, the democratization of politics, the growth of empire and changing roles for women and the family. Prerequisite: 330b or consent of instructor.

443-3 Twentieth Century England. The social, economic and political development of England in the twentieth century.

450-6 (3,3) Early America. The evolution of American society from European settlement through the Age of Jefferson, with special emphasis on social and political institutions and thought.

451-3 United States History, 1815-1850. The struggle for democratic institutions and the emergence of sectional conflict in the Jacksonian Era.

452-6 (3,3) United States History 1850-1896. (a) Civil War era; (b) the origins of modern America; reconstruction and nationalization; 1865-1896. The study of the background to the Civil War, the Civil War, Reconstruction, and the Gilded Age.

453-6 (3,3) United States History, 1896-1945. (a) 1896-1921; (b) 1921-1945. The history of the United States since the 1890's with emphasis upon politics, political ideas and diplomacy.

454-6 (3,3) Cold War United States, 1945-1990. (a) 1945-1963; (b) 1963-1990. Topical course emphasizing the impact of the Cold War on United States society. (a) Focuses on foreign policy debates, domestic anti-communism and cultural effects of the Cold War. (b) Focuses on the Vietnam War, the arms race and the effects of the Cold War on economic and social issues (poverty, civil rights, the environment).

460-6 (3,3) Social History of the United States. (a) to 1860; (b) since 1860. The historical development of relationships among America's various ethnic, religious, racial, economic, and sexual groups.

461-6 (3,3) Constitutional History of the United States. (a) To 1877; (b) from 1877. Origin and development of the American Constitution from the English background to the present time. Stress is placed on the political, social, and economic forces which influenced the American constitutional system.

462-3 History of American Health and Medicine. Readings and discussion about the development of modern medicine as it affected patients and doctors in the United States. Health care will be traced historically, with discussions of the development of medical science as well as medical organizations and institutions.

463-6 (3,3) History of American Diplomacy. (a) To 1900; (b) Since 1900. General consideration of American foreign policy and the emergence of the United States as world power.

464-3 American Economic Business History. A survey of economic trends and business developments in American history, from colonial times to the present.

465-6 (3,3) History of the South. (a) The Old South; (b) The New South. Social, economic, political, and cultural development of the South.

466-6 (3,3) History of the American West. (a) Trans-Appalachian Frontier; (b) Trans-Mississippi Frontier. The American frontier and its impact on American society from the colonial period to the 20th century.

467-3 History of American Thought to 1860. The principal intellectual currents in American thought and culture from the 17th Century through the mid-19th Century. Major themes include the intellectual origins and manifestations of Puritanism, the Enlightenment, and Romanticism.

469-3 Darwin and the Darwinian World. Readings and discussion on the impact of Charles Darwin on American thought and culture. Focus areas include religion, social ethics, political criticism, social critics, economics, the genteel tradition, utopian writers, race, and imperialism.

470-6 (3,3) Continuity and Change in Latin America. (a) To 1825; (b) Since 1825. The interaction of economic forces and intellectual currents with Latin American social structures and political institutions, from pre-Columbian times to the present.

474-3 Andean South America. The political, economic, social, and cultural development of the Andean nations from pre-Columbian times to the present.

480-6 (3,3) History of Chinese Civilization. (a) Traditional China; (b) Modern China. The first semester provides a full coverage of traditional China and emphasis on classical philosophies, religions, historical writings, literature, arts, and science. The second semester deals with the transformation of China into the modern ages.

484-3 History of Central Asia. Tribes, migrations, wars, and power politics in Central Asia and outlying areas of China from Han times through 19th century rivalries to latest developments along the Sino-Soviet frontier.

485-3 Islamic World to 712. A study of the formative years of Islam, and of events which led to the establishment of the first Muslim empire, extending from Spain in the West to India in the East.

487-3 Modern Islamic World. Surveys the cultural, social and political impact of Islam on world civilization since the 18th century, with an emphasis on the internal changes within Islam as a result of cross-cultural contact. The impact of colonization on the Muslim world and subsequent reform movements are examined.

490-1 to 4 Special Readings in History. Supervised readings for students with sufficient background. Prerequisite: registration by special permission only.

491-3 Historiography. Writings of historians from Herodotus to the present.

493-1 to 6 Problems in History. Topics vary with instructor. May be repeated for a maximum of six semester hours provided registrations cover different topics. Topics announced in advance.

494-3 Quantitative Research in History. An introduction to the application of quantitative data and social science methods to historical research.

495-4 History Honors. Principles of historical method, research, and writing for senior honor students only. Not for graduate credit. Prerequisite: consent of department.

496-1 to 9 Internship in History. Supervised field work in public or private agencies or operation where history majors are frequently employed, such as archives and libraries, government offices, communications media, historic sites, and museums. Only three hours may be applied to the major and six hours toward the M.A. degree. Prerequisite: consent of department.

497-3 Historical Museums, Sites, Restorations and Archives. The development of museums from antiquity to the present, with emphasis on the United States. Additional topics include historical sites such as battlefields, historic buildings, restorations, monuments and archives. Also examines the purposes and functions of the museum and the tasks of professionals employed in museums or interpretative centers. Given in cooperation with the University Museum.

Industrial Technology (IT)

Safety glasses, a suitable scientific calculator, and textbooks are required for most of the following courses.

105-3 Computer-Aided Drafting. Basic principles of technical sketching including freehand sketching techniques, lettering, orthographic projection, pictorial sketching, auxiliary views, sectional views, dimensioning, tolerancing, fasteners, working drawing interpretation, and computer-aided drafting.

208-3 Fundamentals of Manufacturing Processes. Introduction to the basic processes, equipment, and material used in manufacturing. Includes plastics, metal removal, materials joining, casting, and some of the newer processes.

209-3 Manufacturing Process Laboratory. (Same as Engineering Technology 209.) Laboratory experiments to familiarize the student with the theory and operation of manufacturing processes. Laboratory. Prerequisite: 208 or consent of instructor.

240-3 First-Line Supervision. Analysis of problems of first-line supervisors. Topics include leadership, motivation, communication, grievances, training, discipline, group and individual effectiveness, and labor relations.

258-2 to 30 Work Experience Credit. Credit granted for past work experience while employed in fields related to the student's educational objective. Credit is established by departmental evaluation.

259-2 to 60 Occupational Credit. For occupational credit earned at junior colleges and technical institutes. Credit is established by departmental evaluation.

270-3 Computational Methods for Industrial Technologists. Introduces the student to a problem-oriented computer language that is used to solve relevant problems that occur in industry.

305-3 Industrial Safety. Principles of industrial accident prevention; accident statistics and costs; appraising safety performance; recognizing industrial hazards and recommending safeguards. Includes a study of the Occupational Safety and Health Act and the Coal Mine Health and Safety Act.

307-3 Applied Calculus for Technology. Applying mathematical techniques to technology problems, including the analysis, formulation, and problem solutions. Techniques of differentiation, max-min problems, and elementary techniques of integration. Prerequisite: Mathematics 111 or equivalent.

319-2 to 16 Industrial Internship. Industrial experience includes job skills, manufacturing processes, technical information, and labor-management relationships with supervised instruction, conferences, and examinations. Prerequisite: consent of instructor. Mandatory Pass/Fail.

320-3 Surface Mining Operations. The elements of surface mining, methods and equipment, surface mine terminology, pit development, and equipment selection. Field trips. Prerequisite: appropriate background.

321-3 Underground Mining. Study of terminology, mining methods, equipment selection, ventilation, haulage, coal handling, and safety parameters associated with underground coal extraction technology.

330-1 Current Mining Problems. Guest lecturers provide timely information on current mining technology problems. Special investigations of mining techniques. Emphasis on state and federal regulations.

341-3 Maintenance. Principles and practices of maintenance department organization, preventative procedures, and typical equipment problems. Also, includes related topics such as plant protection, custodial services, and maintenance of powerplants.

342-1 to 12 Industrial Technology Cooperative Education. Supervised work experience in industry with an emphasis on manufacturing. Students will gain first-hand knowledge of the various aspects of Industrial Technology. Work experience is supervised by a faculty. Reports will be required from the student and employer. Hours may count toward technical electives. Mandatory Pass/Fail. Prerequisite: junior standing.

351-3 Industrial Metrology. Methods and equipment of industrial measurement and inspection. Includes 3-D measuring machines, lasers, and non-destructive testing.

360-3 Mine Production and Inventory Control. Study of mine production and inventory control through the exploration, development, and production phases. Includes topics in planning, process control equipment, scheduling, inventory control, and cost analysis.

362-3 Industrial Packaging. Analysis of packing principles, equipment, and processes such as paper, glass, metal containers, and plastics.

375-3 Production and Inventory Control. Production and inventory control systems. Includes topics in forecasting, master production scheduling, material requirements planning, capacity requirements planning, inventory management, production activity control, and applicable operations research techniques.

382-3 Motion and Time Study. Principles and practices of motion and time study including process charts, operation charts, motion summary, and time standards.

386-3 Total Quality. Application of quantitative methods and human resources to improve product quality, enhance productivity, customer satisfaction, manufacturing organizational effectiveness and ability to compete in a global market.

390-3 Cost Estimating. (Same as Engineering Technology 390.) Study of the techniques of cost estimation for products, processes, equipment, projects, and systems. Prerequisite: Mathematics 111.

392-3 Facilities Planning. The analysis of data to produce a complex facilities plan which maximizes the efficiency of the operation. Methods and equipment of material handling are an important part of the course. Students are assigned an extensive facilities planning project. Prerequisite: 208 and 382 or consent of instructor.

395-3 Technology Design. An elective project on a technical subject selected by the student with advice from the instructor. Stimulates original thought and creativity. Prerequisite: consent of instructor.

410-3 Mining Reclamation. Study of reclamation techniques associated with underground and surface coal mining. Emphasis is placed on the integration and cost trade-offs associated with coal extraction and reclamation as well as federal, state, and local regulations. Prerequisite: consent of instructor.

420-3 Coal Preparation and Analysis. Study of coal preparation and blending in association with coal analysis. Design and operation of preparation plants including water management, waste management, coal storage, loading, and transportation.

425-3 Advanced Process Design and Control. Extension of other process courses offered. Meets the need of those students who enter the field of manufacturing by giving more emphasis on planning, estimating, and control of industrial processes. Laboratory. Prerequisite: 208, 209.

430-3 Health and Injury Control in A Work Setting. (Same as Health Education 430.) Assesses the health and injury control programs present in a work setting. Emphasis given to employee programs in health, wellness, and injury control that are effective. Field trips to work sites are included.

439-3 Bulk Materials Handling. Study of the various types of equipment used in the mining industry. Estimation of costs and output of equipment used for excavating and transporting earth materials. Prerequisite: appropriate background.

440-3 Manufacturing Policy. Review of all areas covered by the industrial technology program. Includes problems which simulate existing conditions in industry. Students present their solutions to the class and to the instructor in a formal manner. Prerequisite: 375, 382, 392 and 475.

441-3 Mine-Safety Technology. An in-depth study of the technological implications of the Federal Coal Mine Health and Safety Act. Emphasis is placed on the technology required to operate safely underground coal mines. Prerequisite: appropriate background.

445-3 Computer-Aided Manufacturing. (Same as Engineering Technology 445.) Introduction to the use of computers in the manufacture of products. Includes the study of direct and computer numerical control of machine tools as well as interaction with process planning, inventory control, and quality control. Laboratory. Prerequisite: Engineering Technology 103 or Industrial Technology 105, Industrial Technology 208 or Engineering Technology 209 and computer programming.

455-3 Industrial Robotics. (Same as Engineering Technology 455.) Study of industrial robots and their applications; pendant and numerical programming of robots. Robotics design including tactile and visual sensors. Technical and psychological problems of justification, installation, and management of robotic systems. Prerequisite: 445.

460-3 Mining Technology. A capstone course to include all aspects of coal mining. Group projects are assigned on the design and development of a mine with emphasis on cost, productivity, yield, equipment, and staffing. Prerequisite: 320, 321, 420, or consent of instructor.

475-3 Quality Control. Use of statistical quality control to improve work product quality. Topics include histogram, Pareto diagrams, control charts, acceptance sampling, process capability, cause and effect diagrams, and reliability. Prerequisite: senior standing.

492-1 to 6 Special Problems in Industry. Special opportunity for students to obtain assistance and guidance in the investigation and solution of selected industrial problems. Not for graduate credit. Prerequisite: consent of instructor.

494-1 to 9 (1 hour per section) Applied Project. Selected applied project. Requires the students to apply knowledge learned in various courses to the solution of industrial problems. (a) Motion and time study, (b) Cost estimating, (c) Materials handling and plant layout, (d) Production and inventory control, (e) Quality control, (f) Manufacturing policy, (h) Fundamentals of industrial processes, (i) Industrial safety, (k) Computer-aided manufacturing. Not for graduate credit. Prerequisite: consent of instructor.

Information Management Systems (IMS)

The Department of Information Management Systems in the College of Applied Sciences and Arts offers the following core curriculum substitutions and technically-related courses. These courses serve as common requirements for various majors. Selected courses are available to students enrolled in other academic units.

101-3 Introduction to Information Processing. The successful student should be able to demonstrate an understanding of basic terminology, procedures, applications, and equipment used in information processing. Topics covered will range from simple computer processing techniques to advanced contemporary applications. Credit cannot be given for both 101 and Information Management Systems 109. Lecture three hours. Restricted to majors and minors.

102-3 Introduction to Programming. The successful student should be able to flowchart and code logical solutions to business data processing problems using general approaches to totaling, table processing and file updating. Lecture three hours. Prerequisite: 109. May be taken concurrently or consent of department.

105-4 (2,2) Technical Mathematics. Will enable the student to solve problems within the context of engineering technologies. Lecture-discussion, four hours per week for eight weeks. The use of an electronic calculator with scientific functions is required. (a) Emphasizes the use of algebraic equations and geometric relationships and formulas, and right triangle trigonometry. Prerequisite: one year of high school algebra or equivalent as determined by department. (b) Emphasizes the application of trigonometric relationships to problems in applied technologies and contains additional topics in algebra, including linear systems, quadratic equations and exponential and logarithmic functions. Prerequisite: 105a or equivalent as determined by department.

107-4 (2,2) Applied Physics. Places emphasis on basic and applied physics at a level consistent with technical education objectives. The student will learn laws and principles and solve problems pertaining to (a) mechanics and the structure of matter, (b) heat and electricity. Lecture-discussion four hours per week for eight weeks for both (a) and (b). Prerequisite: 105a or equivalent as determined by department. 107a is prerequisite to 107b.

109-3 Information Processing Concepts. The successful student should be able to demonstrate an understanding of basic terminology, procedures, applications and equipment used in information processing. Topics covered will range from simple computer processing techniques to advanced contemporary applications. Credit cannot be given for both Computer Information Processing 101 and 109. Lecture three hours. Intended for non-majors.

111-3 Cobol Programming I. The successful student should be able to flowchart, code, and run a variety of simple problems using disk input, disk and printer output, control breaks, and one dimensional tables. Lecture three hours. Prerequisite: Information Management Systems 102.

120-3 Fiscal Aspects of Applied Sciences and Arts I. An individualized program of instruction designed to acquaint students enrolled in the various technical programs of the College of Applied Sciences and Arts with applications and procedures common to their area of specialization. Students will be able to demonstrate a basic working knowledge of the standard documents and procedures related to their specific area through the use of business working papers and practice sets. Open to students in the College of Applied Sciences and Arts and other with consent of instructor. Lecture three hours.

121-3 RPG Programming. The successful student should be able to code and run a variety of business problems in the Report Program Generator language with disk and printer files, multiple record formats, multiple file input, tables, arrays, matching records, and selected special features. Lecture three hours. Prerequisite: Information Management Systems 102.

125-4 Technical Mathematics with Application. Emphasizes the application of algebra and trigonometry in technical fields. Topics in algebra to include functions and graphs, systems of linear equations, quadratic equations, higher degree equations and variation. Topics in trigonometry to include the trigonometric functions, complex numbers, exponential and logarithmic functions. Prerequisite: two years of high school algebra or equivalent as determined by department.

131-3 Information Processing Applications. The successful student will demonstrate by examination a general knowledge of processing procedures and terminology for basic business applications such as billing, accounts payable and receivable, inventory control, and payroll. In addition, the successful student will implement selected business procedures on microcomputers using appropriate applications software packages, such as word processing, data base, and spread sheets. Lecture three hours.

212-3 COBOL Programming II. The successful student should be able to flowchart, code, and run a variety of complex problems using disk and printer files and advanced COBOL language features. Lecture three hours. Prerequisite: 111 or equivalent with a grade of C or better.

213-6 Information Processing Project. The successful student will design and implement a minisystem for a problem approximating the type encountered in industry by entry-level programmers. The student draws upon knowledge gained in previous courses and develops an understanding of how the various subject matter fits together. Lecture three hours. Independent laboratory four hours. Prerequisite: 212 with a grade of C or better, 232, 233 or consent of instructor.

220-3 Fiscal Aspects of Applied Sciences and Arts II. A continuation of 120 for selected curriculum areas. Emphasis on continued development of knowledge and skills typically involved in small business management, ownership, partnerships and corporations. New areas of study will include automated data processing, cost estimating and payroll tax procedures through the use of business working papers and a practice set. Prerequisite: 120.

222-4 Assembler Programming. The successful student should be able to code and run a variety of business oriented problems using disk and printer files, character, decimal, and binary instruction sets, table/array processing, and subroutines. Lecture four hours. Prerequisite: two prior programming classes or consent of instructor.

229-3 Computing for Business Administration. The successful student will acquire an understanding of information systems concepts and of the use of computers to process business data through solving a variety of business related problems. Emphasis is on the computer as a management tool. Lecture three hours.

232-3 Systems Design and Development. The successful student will demonstrate in class discussion, on examinations and by preparing a case study the ability to design an effective business information processing system, including system flow chart, specifications, feasibility, implementation procedure, and essential documentation. Lecture three hours. Prerequisite: 111 and 131 or consent of instructor.

233-4 Job Control Language and Utilities. The successful student will demonstrate by examination an understanding of operating systems, and should be able to code and run problems involving JCL statements and utility programs to create, edit, sort, copy, and execute files. Lecture four hours. Prerequisite: 111 or consent of instructor.

258-1 to 30 Work Experience Credit. Credit granted for job skills, management-worker relations and supervisory experience for past work experience while employed in industry, business, the professions, or service occupations. Credit will be established by departmental evaluation.

259-1 to 60 Occupational Education Credit. A designation for credit granted for past occupational educational experiences related to the student's educational objectives. Credit will be established by departmental evaluation.

291-1 Introduction to VM/CMS. A short course introduction to the terminology and procedures necessary to create and modify files in CMS. Execs, macros and IBM manual notation are included. Lecture one hour. Mandatory Pass/Fail.

292-1 Introduction to Microcomputers. A short course introduction to concepts and procedures related to using microcomputer hardware and software. Lecture one hour. Mandatory Pass/Fail.

293-1 Introduction to Spreadsheets. A short course introduction to the main features of a spreadsheet to solve a variety of problems. Lecture one hour. Mandatory Pass/Fail.

294-1 Introduction to Databases. A short course introduction to the main features of a data base to solve a variety of problems. Lecture one hour. Mandatory Pass/Fail.

319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to individually arranged. Mandatory Pass/Fail.

323-3 Pascal Programming. The successful student should be able to code and run a variety of business problems in Pascal with disk and printer files. Programs range from simple to complex problems employing a variety of language features and business related programming techniques. Lecture three hours. Prerequisite: two programming courses or consent of instructor.

334-3 Database Processing. The successful student will demonstrate by examination an understanding of database terminology, structure, languages, implementation, and administration. Lecture three hours. Prerequisite: 212 or consent of instructor.

335-3 Data Communications. The successful student will demonstrate by examination an understanding of concepts and vocabulary related to designing, implementing, and maintaining communication networks. Lecture three hours. Prerequisite: 101 and 111 or equivalent or consent of instructor.

350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credits to individually arranged. This course may be classified as independent study. Prerequisite: consent of instructor.

381-1 to 9 Special Topics. Intensive study of selected topics relevant to the contemporary business information processing environment. Offered as need exists, and as time and interests permit. May be repeated for credit up to nine hours total. Prerequisite: CIP/ATS major or consent of department.

Interior Design (ID)

111-4 Basic Design Studio I. Introduction to the elements and principles of design: point, line, balance, form, rhythm, and texture through the application of purposeful experiments in 2D/3D models, both traditionally created and computer generated. Lecture and studio.

112-4 Basic Design Studio II. Introduction to the elements and principles of design: scale, proportion, emphasis, light, color, and unity. Elements and principles previously learned will be used extensively. Experimentation using 2D and 3D models, both traditionally created and computer generated, will be applied to course work. Lecture and Studio. Prerequisite: 111, 121.

121-3 Basic Interior Design Drawing I. The development of drawing skills for interior spaces to include lettering, linework, geometric construction, orthographic projections, sections, axonometric drawings, shades and shadows, systems graphics, interior elevations and computer-aided design. Lecture and studio.

122-3 Basic Interior Design Drawing II. Three dimensional visualization drawing methods, both interior and exterior, with an emphasis on spacial quality. Various methods of visualization will be studied, to include both manual and computer assisted. Lecture and studio. Prerequisite: 111 and 121.

199-1 to 10 Individual Study. Provides first-year students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of

facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor and department chair.

211-3 Color Theory in Design Applications. The study of color theory and application relative to the interior environment. Emphasis will be placed on human response to color, science of color/light and color/pigment, principles of color design, and implementation through design projects. Prerequisite: 111, 112, 252.

231-3 History of Interior Design and Architecture I. Summary of interiors, their furnishings and buildings from antiquity to 19th century including the socio-economic, psychological and philosophical rationales. Lecture. Prerequisite: Art and Design 101.

232-3 History of Interior Design and Architecture II. Summary of interiors, their furnishings, and buildings from the 19th Century to the present from the point-of-view of socio-economic, psychological and philosophical rationales. Lecture. Prerequisite: 231.

251-3 Presentation, Media and Technique. The use of drawing as a means to communicate concepts and ideas and the methods, materials and media used to present interior design projects. Lecture and studio. Prerequisite: 112, 122, AD 120.

252-3 Interior Design Programming I. Introduction to the design process used in interior design with an emphasis on the study of the methods for gathering data and analysis of project information for design synthesis. Lecture and studio. Prerequisite: 112 and 122 or concurrent enrollment.

271-3 Interior Construction I. Introduction and development of the construction knowledge and drafting skills needed to produce a set of architectural drawings for a single-story structure. Emphasis will be placed upon materials and methods of interior construction in addition to the preparation of working drawings. Lecture and studio. Prerequisite: 112 and 122.

272-3 Interior Construction II. The development of interior construction knowledge and drafting skills to solve interior architectural problems in new construction with an emphasis upon highrise structures. Special concern in the adherence to building, fire and handicapped accessibility codes are to be observed in the preparation of the working drawings. The use of computer-aided drafting and systems drafting will be utilized. Lecture and studio. Prerequisite: 271 and concurrent enrollment in 274.

274-3 Materials and Specifications. A study of materials and finishes applicable to the interior environment including production methods, limitations, quality control, application, and uses. Emphasis is on specification for commercial interiors and liability issues for interior designers. Lecture. Prerequisite: concurrent enrollment in 272.

299-1 to 16 Individual Study. Provides students with opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor and department chair.

300-1 to 3 Resources in Practice. Participation in the operation of the division resource library provides students the opportunity to become familiar with resources used in the profession. Emphasis is placed on gaining knowledge of practices necessary to competently organize and maintain a professional working resource facility. Prerequisite: consent of instructor.

319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. This course may be classified as independent study. Prerequisite: consent of instructor.

351-3 Furniture Design. Study of furniture through evaluation of historic furnishings as well as contemporary furnishings. Issues include ergonomics, anthropometrics, quality of materials and methods of construction. Lecture. Prerequisite: 232, 272, 274, and Workforce Education and Development 335.

370-1 to 3 Special Topics in Lighting Design. A seminar course which explores current issues in the area of lighting design. Emphasis is placed upon supervised readings, discussion and creative projects directed toward individual research. Prerequisite: 371 and consent of instructor.

371-3 Lighting and Acoustical Systems. The study of lighting and acoustics as major tools in designing interior spaces through actual problem solving. Emphasis is on task, ambient and specialty lighting as well as sound control within and between spaces. Lecture. Prerequisite: Mathematics 140 or University core mathematics and Interior Design 272 or concurrent enrollment in Interior Design 272 or Architectural Studies 324.

372-3 Mechanical and Plumbing Systems. Study of interior architectural mechanical equipment as it relates to the proximate environment. Emphasis is on heating, cooling, ventilation and plumbing systems with attendant building codes. Lecture. Prerequisite: Mathematics 140 or University core mathematics and Interior Design 272 or concurrent enrollment in Interior Design 272 or Architectural Studies 324.

390-1 to 4 Special Project in Interior Design. Investigation of a project-type specialization. Includes application of design process principles with emphasis on programming and preliminary design. Studio. Prerequisite: 391 and consent of instructor.

391-4 Interior Design Studio I. Interior design of the personal environment at the individual level. Emphasis is on residential design. Lecture and studio. Prerequisite: 251, 252, 272, 274 or consent of department chair.

392-4 Interior Design Studio II. Interior design of the environment at the multi-user level when client/owner and client/user are different. Emphasis is on public access spaces, e.g., restaurants, stores, museums, professional offices, and future facilities. Lecture and studio. Prerequisite: 391.

432-3 Interior Design Seminar. Study of the current trends and topics in interior design. Not for graduate credit. Prerequisite: 351, 371, 491.

451-3 Interior Design Programming II. Preliminary stage of senior design project includes project research, data gathering, and analysis. Lecture and studio. Not for graduate credit. Prerequisite: 392.

471-3 Professional Practice. Introduction to the organization, management, and practice of Architecture and Interior Design as a business and profession. Emphasis is placed on the range of services provided, professional ethics, business management, marketing, contracts and negotiations, design cost analysis/control, and other aspects of professional practice. Lecture three hours. Not for graduate credit. Prerequisite: 392 or Architectural Studies 215 or consent of department chair.

491-4 Interior Design Studio III. Interior design of the environment at the corporate or institutional level where client/owner and client/user are significantly different. Emphasis is on design. Furniture systems, particularly in the area of office planning, are to be included. Facility types include financial institutions and institutional facilities. Lecture and studio. Not for graduate credit. Prerequisite: 351, 371 and 392 or concurrent enrollment.

492-4 Interior Design Studio IV. Completion of an interior design project of approximately 5,000 square feet as initiated in Interior Design 451. Emphasis is on design process from schematic design through completion of annotated construction document with estimate of cost. Facility types include Health Care or Recreation/Hospitality. Lecture and studio. Not for graduate credit. Prerequisite: 451 and 491.

Japanese (JPN)

131-8 (4,4) Elementary Japanese. Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of Japanese is required. Must be taken in a,b sequence.

201-8 (4,4) Intermediate Japanese. Development of listening, speaking, reading, and writing skills on the intermediate level. Must be taken in a,b sequence. Prerequisite: 131b or equivalent.

305-2 to 4 (2,2) Individualized Language Study. Designed to improve language skill beyond the intermediate level. Tailored to the particular needs of students. Prerequisite: 201b or equivalent.

320-8 (4,4) Advanced Japanese. Further development of listening, speaking, reading, and writing skills on the advanced level. Emphasis on developing proficiency in reading modern Japanese through cultural readings. Must be taken in a,b sequence. Prerequisite: 201b or equivalent.

321-2 Conversational Japanese. Practice in spoken Japanese and practical writing skills (e.g., writing memos, letters, notes). Activities include practice of routines of Japanese etiquette, discussions of Japanese television and film, prepared and impromptu group discussion and speeches, writing and performing a play in Japanese. Not open to native speakers without permission. Prerequisite: 201a or consent of instructor.

360-3 Reading and Writing Japanese. Practice in reading Japanese for comprehension and writing for practical communication. Introduces a variety of written media (e.g., Japanese comic books, newspaper, magazines, children's books, school textbook) and teaches the fundamentals of Japanese word processing. Taught primarily in Japanese. Prerequisite: 201b or the equivalent.

370-3 Contemporary Japan. A study of customs, habits, beliefs, values and etiquette in Japanese culture. Instruction in English. Prerequisite: Foreign Languages and Literatures 313i or consent of instructor.

375-1 to 6 Travel Study in Japan. Supervised travel-study in Japan. Prerequisite: consent of faculty.

390-1 to 6 Independent Study in Japanese. Directed individual study of some question, author, or theme of significance in the field of Japanese literature, language, or culture. Prerequisite: consent of instructor.

410-3 The Linguistic Structure of Japanese. (Same as Linguistics 412.) Inductive approach to the analysis of various aspects (such as phonology, morphology, syntax) of Japanese grammar with emphasis on syntactic structures within any of the current theoretical frameworks such as pragmatics, functionalism and formal linguistics. May include contrastive analysis between Japanese and English, and close examination of theories of comparative-historical linguistics of Japanese and Korean. Prerequisite: One year of Japanese or one previous course in linguistics or consent of instructor.

435-3 Business Japanese. An introduction to the language and culture of the Japanese business world and to the structure of the Japanese business economy. The emphasis will be on learning appropriate levels of formality and politeness in oral communication and on achieving competency in the specialized language of business. Prerequisite: 320a,b or equivalent.

490-1 to 6 Advanced Independent Study in Japanese. Directed individual study of some questions, author, or theme of significance in the field of Japanese literature, language, or culture. Prerequisite: consent of instructor.

Journalism (JRNL)

160-3 Mass Communication in Society. Acquaints non-journalism students with the history and development of the American mass media. Examines media roles in society, potential for development, weak points, and the roles consumers can and should play regarding the media. This course may not be applied toward major or minor credit in Journalism.

300-3 Mass Media in Modern Society. Develops an awareness of the pervasive nature of the mass media in our society and an understanding of how the media operate, with emphasis on contemporary social and economic problems in the media.

301-3 Principles of Advertising/IMC. (Formerly 370) An introduction to integrated marketing communications elements, including advertising, direct response, sales promotion and marketing public relations, and their functions in today's communication environment. Explores research, media and message elements in-

volved in the creation of a campaign; governmental regulations; and social and economic consideration. Prerequisite: 303, 304, 305

302-3 Copywriting for Advertising/IMC. (Formerly 309) Study of the principles and practice in the writing of copy and visual design of persuasive messages such as advertising, sales promotion, direct response, marketing public relations and others. Includes writing for print and broadcast media, across products and services, and oral presentation of materials. Prerequisite: ACTE English subscore of 20 or higher or grade of C or higher in English 290 or Linguistics 290 and typing speed of at least 30 words per minute.

303-3 Creating Advertising/IMC Messages. (Formerly 374) Examination of and practice in the development of persuasive message strategies and the writing and design of messages for all media advertising, direct response, sales promotion and marketing public relations, and oral presentations of IMC materials. Prerequisite: 301, 302 and ACTE English subscore of 20 or higher, or grade of C or higher in English 290 or Linguistics 290.

304-3 Placing Advertising/IMC. (Formerly 372) Examination of the various media systems/types available to carry advertising/IMC creative messages. Emphasis is given to both the development of advertising/IMC media objectives and strategies in the context of a media plan, as well as the steps involved in the actual negotiation of specific media vehicles. Prerequisite: ACTE English subscore of 20 or higher or minimum grade of C in English 290 or Linguistics 290 and Journalism 301 and Marketing 304.

305-3 Direct Response Advertising/IMC. Overview of direct response advertising and its measurability; the media involved; and the strategic, tactical and creative approaches. Introduces topics such as database management, mailing lists, telemarketing, lead generation program, catalog marketing, sales promotion and business-to-business marketing communications. Prerequisite: 301, 302 and Marketing 304.

310-3 Writing for the Mass Media. Study in the fundamentals of news writing, the techniques of news gathering and reporting, and the principles of editing with experience in the gathering, writing, rewriting, and editing of news copy. Prerequisite: typing speed of at least 30 words per minute and ACTE English subscore of 20 or higher or minimum grade of C in English 290 or Linguistics 290.

311-3 Reporting and News Writing. Purposes and effects of different orientations to the information gathering and news writing processes; information sources, interviewing, writing, and editing practices; laboratory in reporting, writing, and editing for the news media. Prerequisite: 310 and an ACTE English subscore of 20 or higher or minimum grade of C in English 290 or Linguistics 290.

312-3 Editing and Makeup. Principles of editing are combined with graphic concepts and techniques which interrelate printing processes, photography, writing of cutlines, picture page preparation, and page makeup, copyfitting, head schedules, newspaper organization, and the work flow on the ad and editorial sides.

313-3 Introduction to Photojournalism. Fundamentals of publications photography. Includes basic camera technique, black and white film and print processing methods, selection and display of photographs, and evaluation of pictorial communication effects. Student supplies own photographic materials and, where possible, an adjustable camera. Prerequisite: consent of department. Open only to journalism majors. Students are responsible for purchase of supplies. Laboratory fee.

315-3 Graphic Communication. History of printing and typographic development, modern reproduction processes, technological developments, selection and use of appropriate graphic images in communication, and production techniques for publications. Students are responsible for purchase of supplies.

360-3 Magazine Management and Production. The day-to-day operations of a magazine and the techniques involved in producing a magazine. A combination of lectures and workshops in which the professor will deal individually with student projects. Each student will produce an original magazine idea and bring it to, at least, the semi-comprehensive stage of development.

391-3 Feature Writing. Identification, research, and application of creative writing techniques with emphasis on newspaper articles. Analysis of reader appeal; study of feature story structure; development of style by practice in writing feature stories. Prerequisite: 311 or consent of instructor. Not open to students with credit in 462.

400-3 History of Journalism. Development of American newspapers, magazines, and radio-television with emphasis on cultural, technological, and economic backgrounds of press development. Current press structures and policies will be placed in historical perspective.

401-3 International Communication. An analysis of the development, structure, functions, and current status of media systems in other countries. Emphasis given to studying factors that facilitate or restrict the flow of intranational and international communication.

405-3 Introduction to Mass Communication Research. Overview of communication research methods including practical training in interpretation and presentation of social science data. Introduction to survey research methods, experimental design, and use of computers for analysis of data. Presentation of data in journalistic forms and social science reports. Not for graduate credit. Prerequisite: 309 or 310 or consent of instructor.

406-3 Advertising/IMC Campaigns. (Formerly 476) Conceptual synthesis and practical application of business, research, media and creative principles used in the formulation of persuasive messages. Includes the development of a complete integrated marketing communications (IMC) campaign for a specific advertiser. Includes all relevant target audience contact points (e.g., advertising, sales promotion, marketing public relations, event marketing, packaging) and both written and oral presentation of the campaign.

407-3 Social Issues and Advertising/IMC. (Formerly 479) Analysis of social issues involving advertising and integrated marketing communications (IMC); economic relationships, government and self-regulation, cultural effects, influence on media content and structure, role in democratic processes, international comparisons and the stereotyping of women, minorities and other audience segments. Prerequisite: senior standing.

411-3 Public Affairs Reporting. Covering government and other public agencies, including the city hall, courts, county offices, business, finance, agriculture, labor, and other specialized beats. Prerequisite: 311.

416-3 Critical and Persuasive Writing. (Formerly 390) The roles and responsibilities of the editor, editorial writer, and opinion columnist with emphasis upon editorial writing and critical thinking. Editorial problems, methods, policies, style and the fundamentals of persuasion and attitude change form the basis for study. Prerequisite: 311.

442-3 The Law of Journalism. Legal limitations and privileges affecting the mass media to include the law of libel, development of obscenity law, free press and fair trial, contempt of court, right of privacy, advertising and antitrust regulations, copyright, and access to the press. Prerequisite: senior standing.

452-3 Ethics and News Media. An exploration of ethical problems confronting journalists and an evaluation of how these problems are handled by the media through a focus on current examples. The implications to the media and to society of successes and failures in meeting ethical concerns are discussed. Prerequisite: senior standing.

461-3 Specialized Publications. Functions, operations, and problems of industrial, trade, business, professional, literary, and other specialized publications. Management, personnel, and production practices. Use of research in solving problems and setting policies.

462-3 Magazine Article Writing. Principles, problems, and techniques involved in producing free-lance and staff-written magazine articles with an emphasis on determining the relationship between article content and audience market. Prerequisite: 311.

490-1 to 6 (1 to 3, 1 to 3, 1 to 3) Readings. Supervised readings on subject matter not covered in regularly scheduled courses. Undergraduates limited to maximum 2 credits per semester. Graduates limited to maximum 3 credits per semester. Prerequisite: written consent of instructor and area head.

494-1 to 3 Practicum. Study, observation, and participation in publication or broadcast activities. Prerequisite: consent of instructor and area head. Mandatory Pass/Fail for undergraduates.

495-1 to 12 (1 to 6, 1 to 6) Proseminar. Selected seminars investigating media problems or other subjects of topical importance to advanced journalism majors. Seminars will be offered as the need and the interest of students demand. Prerequisite: senior standing.

Liberal Arts, College (LAC)

300I-3 Social Perspectives on Environmental Issues. (University Core Curriculum) Case studies (e.g., rural village in developing nation; small town in the United States; city in developing nation) are used to learn how different societies and groups deal with their specific environmental issues, and how culture and economic factors affect their perspectives and actions.

301-2 Professional Development. This course is designed to prepare liberal arts students for the transition from the academic community into the workforce. Students will develop a personal career development strategy, learn how to conduct a job search in their chosen career field, and acquire professional development skills needed to succeed in various work environments.

303-1 to 9 (1 to 3 per semester) Interdisciplinary Studies. Offered in a variety of forms, including lectures, readings, research, or field study. Initiated by at least two faculty members from different departments. Approval by the dean is required during the semester prior to its offering. May be repeated to equal a total of nine credits.

310-3 Values in the Living World — Life, Normalcy, and the Natural. Intended for students who are interested in examining individual and social values which pertain to those professions based upon the biological sciences; e.g., medicine, nursing, zoology, forestry, etc.

311-3 Values in the Communication Arts. The aim of this course is to examine, by means of readings, films and guest lecturers, some value perspectives of contemporary American life. This will be done in terms of ethical-aesthetic ideals and actual practices to be encountered in the public's most accessible and influential media; i.e., cinema, radio, television, and journalism.

312-3 Applied Values in Society. A consideration of value problems and dilemmas faced by individuals in social science-based professions such as counseling, social welfare, administration of justice, etc. Among the problems to be considered are agency or corporate loyalty vs. individual conscience; individual good vs. social good; and professional ethics vs. individual ethics.

388-1 to 36 Study Abroad. Provides credit toward the undergraduate degree for study at accredited foreign institutions or approved overseas programs. Final determination of credit is made on the student's completion of the work. One to eighteen hours may be earned per semester, one to nine hours may be earned for summer session. Prerequisite: one year of residence at Southern Illinois University at Carbondale, good academic standing, and prior approval of the major department and the College of Liberal Arts.

Linguistics (LING)

100-3 Speaking and Listening in English as a Second Language. Oral conversational and academic English. An elective for students who do not speak English as their first language. Classes are offered at beginning, intermediate and advanced levels. May be repeated at three different levels for a maximum of 9 credit hours. Mandatory Pass/Fail.

101-3 Basic English Composition for Foreign Students. (University Core Curriculum) Instruction in the basic methods of English composition, focusing on the particular problems of non-native speakers of English. Basic English grammar, and techniques of analyzing, summarizing, outlining, documenting, synthesizing, and revising. Equivalent to University Core Curriculum English 101. Credit may be given on passing a proficiency exam. A service charge of not more than \$5 may be made.

104-2 Grammar in Language. Description and explanation of the major grammatical categories and structures found in a wide variety of languages, including English. Consideration of the role of language structures in such topics as the nature, origin, acquisition, and variation of language. Course is designed to give students insight into the basic concepts of grammar and show their interrelationship, importance, and functioning in human language.

105-3 Intermediate English Composition for Foreign Students. (University Core Curriculum) Instruction in academic and technical writing for students whose native language is not English. Includes practice in library research, analyzing, summarizing, business and technical writing, and writing of reports, research papers, and projects. A service charge of not more than \$5 may be made. Prerequisite: 101 or equivalent with a minimum grade of C, or pass the Linguistic 101 proficiency exam. Equivalent to University Core Curriculum English 102.

200-3 Introduction to the Nature of Language. An exploration of social and psychological dimensions of language. Topics include first and second language learning, change in language, the interaction of language and culture, and the importance of language for human development and communication. A variety of the world's languages is examined with particular emphasis on English and its role in international science, trade, technology, and government.

201-3 Language Diversity in the USA. (University Core Curriculum) An examination of different varieties of English and the growing presence of other languages in the United States. Local, regional and national perspectives are used to review current patterns of language diversity and to explore the impact of language issues on policies and practices in education, the legal system and the work place.

290-3 Advanced English Composition for Foreign Students. Designed for students whose native language is not English who need further work in English composition. Includes practice in library research, and focuses on writing research papers. A service charge of not more than \$5 may be made. Prerequisite: 105 or equivalent with a minimum grade of C; graduate students by placement test.

298-1 Multicultural Applied Experience. (Multicultural Applied Experience Course) An applied experience, service-oriented credit in American diversity involving a group different from the student's own. Difference can be manifested by age, gender, ethnicity, nationality, political affiliation, race or class. Students can sign up for the one-credit experience in the same semester they fulfill the multicultural requirement for the University Core Curriculum or coordinate the credit with a particular core course on American diversity, although neither is required. Students should consult the department for course specifications regarding grading, work requirements and supervision. Graded Pass/Fail.

300-3 Introduction to Descriptive Linguistics. An introductory survey of descriptive linguistics: assumptions, methods, goals, terminology, and data manipulation. Prerequisite: 200 or consent of instructor.

330-3 Language and Behavior. A wide-ranging examination of the implications of language study for people's view of themselves and their place in the world. Topics deal with the pervasiveness of verbal and non-verbal language in various aspects of modern society.

341-3 Introduction to Intercultural Communication. (See Speech Communication 341.)

402-3 Phonetics. Theory and practice of articulatory phonetics.

403-3 English Phonology. Study of English phonology, including phonetics, phonemics and prosodics. Prerequisite: 300 or 401, 402 or consent of department.

404-3 American Dialects. Regional variation and social stratification of American English. Phonological and syntactic differences among the major dialects of American English. Prerequisite: one previous course in linguistics.

405-4 Phonological Theories. A survey of various phonological theories from the 19th century up to the present, including theoretical issues arising therefrom and relationships among the theories. Limited data analysis within the perspectives of the different theories. Prerequisite: 300 or 401, and 402.

406-3 Introduction to Historical Linguistics. An introductory survey of historical and comparative linguistics, including terminology, assumptions and methods of investigation. Satisfies the CoLA Writing-Across-the-Curriculum requirement. Prerequisite: 405 or consent of instructor; 408 recommended.

408-4 Syntactic Theory. This course is an introduction to the major concepts and issues in generative grammar. Data from English and other languages will be examined and students will be provided with numerous opportunities to solve problems in syntax. Students will also be given an opportunity to carry out an individual project in syntax. Prerequisite: 300 or 401 or consent of instructor.

409-3 Linguistic Structure of Modern German. (Same as German 411.) The descriptive study of phonology, grammatical structure, and vocabulary of modern German with consideration of its structural differences from English and application to teaching. Appropriate for students with at least two years of German. Conducted in English.

411-3 The Linguistic Structure of Chinese. (Same as Chinese 410.) Phonology and syntax of Mandarin Chinese. Principal phonological features of major Chinese dialects. Special emphasis on the contrastive analysis between Mandarin Chinese and English. Theoretical implications of Chinese syntax for current linguistic theories. Prerequisite: one year of Chinese or Linguistics 401.

412-3 The Linguistic Structure of Japanese. (Same as Linguistics 412.) Inductive approach to the analysis of various aspects (such as phonology, morphology, syntax) of Japanese grammar with emphasis on syntactic structures within any of the current theoretical frameworks such as pragmatics, functionalism and formal linguistics. May include contrastive analysis between Japanese and English, and close examination of theories of comparative-historical linguistics of Japanese and Korean. Prerequisite: one year of Japanese or one previous course in linguistics and consent of instructor.

413-3 Linguistic Structure of French. (Same as French 411.) Study of the phonology, morphology, and syntax of modern spoken and written French, stressing interference areas for English speakers in learning French. Prerequisite: French 320a and 321 or equivalent.

414-3 Linguistic Structure of Spanish. (Same as Spanish 411.) Theory and practice in Spanish pronunciation and study of Spanish grammatical structure, in contrast to English, with application to teaching.

415-3 Sociolinguistics. History, methodology, and future prospects in the study of social dialectology, linguistic geography, multilingualism, languages in contact, pidgin and creole languages, and language planning. Prerequisite: one previous course in linguistics or consent of instructor.

425-3 Philosophy of Language. (Same as Philosophy 425.) An investigation into the way language is based on the nature of human cognitive structures, including metaphor, prototypes, frames, and various kinds of imaginative structures. Central topics include the grounding of meaning and conceptual structure in bodily experience, the role of imagination in reasoning, and the metaphorical nature of thought.

430-3 to 6 (3,3) Grammatical Structures. Detailed analysis of the structure of particular languages. May be repeated to a total of six hours credit with consent of department. Prerequisite: one previous course in linguistics or consent of instructor.

440-1 to 6 (1 to 3 per topic) Topics in Linguistics. Selected topics in theoretical and applied linguistics. May be repeated to a total of six hours credit with consent of department. Prerequisite: one previous course in linguistics or consent of instructor.

442-3 Language Planning. Survey of the field of language planning: definitions and typologies, language problems, language treatment, attitudes and beliefs about language, relations between language planning processes and other kinds of social and economic planning, linguistic innovations and other processes of language change, implementation of language policies. Prerequisite: 300 and 401.

445-4 Psycholinguistics. (Same as Psychology 445.) A broad spectrum introduction to psycholinguistics. Topics to be covered include general methodology for the study of psycholinguistics, the nature of language, theories of human communication, language comprehension and production, first and second language acquisition, meaning and thought, natural animal communication systems and language and the brain.

450-3 to 6 (3,3) Language Families. A synchronic survey of particular language families or sub-families. May be repeated to a total of six hours credit with consent of department. Prerequisite: one previous course in linguistics or consent of instructor.

453-4 Methods in Teaching English to Speakers of Other Languages. Introduces the basic methods of TESOL in teaching/learning situations both in the US and abroad. Presents theoretical premises and background from the fields of general linguistics, second language acquisition, psycholinguistics, sociolinguistics, and education. Not for graduate credit. Prerequisite: 200 or consent of instructor and undergraduate status.

454-3 Observation and Practice in Teaching English to Speakers of Other Languages. Focused observations of a wide variety of classes in English as a second language and in foreign languages. Some supervised teaching or tutoring. Analysis of textbooks for TESOL. Not for graduate credit. Prerequisite: 453 or consent of instructor, and undergraduate status.

455-3 Materials in Teaching English to Speakers of Other Languages. A review of principles underlying the use and development of materials for TESOL. Class activities and individual projects deal with evaluation, adaptation, and design of materials. Not for graduate credit. Prerequisite: 453 or consent of instructor and undergraduate status.

456-3 Contrastive and Error Analysis. Examination of the interference of other languages into the English of ESL learners on the levels of phonetics, phonology, morphology, syntax, lexicon, semantics, and orthography. Study of written and spoken errors, diagnosis of errors, and development of techniques for correction. Not for graduate credit. Prerequisite: 453 or consent of instructor.

497-1 to 8 Readings in Linguistics. Directed readings in selected topics. Prerequisite: consent of instructor and undergraduate status.

Management (MGMT)

170-3 Introduction to Business. Survey of business. General knowledge of the modern business world, the composition and functions of the business organization, as well as business as a social institution. Open only to freshmen and sophomores. Does not satisfy a College of Business and Administration requirement.

202-3 Business Communications. Creating and managing written and oral administrative communications including the analysis, planning and practice of composing different types of internal and external communications in various administrative and business contexts. To successfully complete this course, a communication competency examination (additional fee required) must be passed with at least 70% accuracy prior to University course drop date. Prerequisite: English 101 and 102 or equivalent.

208-3 Business Data Analysis. Uses of business data in policy formulation are discussed. Emphasis is placed on the conversion of raw information into statistics which are useful to the decision maker. Problems stress solution to questions typically raised in businesses. Prerequisite: Mathematics 139 or equivalent.

301-3 Global 2000. Global 2000 examines a broad range of international topics, such as global competition, comparative business management, economic and technological change, investment and trade. Each year it concentrates on specific regions, such as the Pacific Rim, Europe, Eastern Europe and Russia, North America, or Africa.

304-3 Introduction to Management. Basic concepts of the administrative process are considered with emphasis on executive action to develop policy, direction and control based on traditional and behavioral science approaches to decision making. Prerequisite: junior standing.

318-3 Production-Operations Management. An introduction to the design, planning and control of manufacturing and service operations. Topical coverage includes Material Requirements Planning, Total Quality Management, Just-in-Time, and operations strategy, as well as traditional techniques for facility layout, scheduling and inventory control. Prerequisite: junior standing.

341-3 Organizational Behavior. The study of human problems in administration including the analyses of individual, group, and inter-group relations under a broad range of organizational settings. Theory and case analyses. Prerequisite: 208, 304, and junior standing or consent of department.

345-3 Computer Information Systems. Integrates topics of management and organization, information, computers and the systems approach. Emphasizes planning, design and implementation of information systems to aid management decision making. Application of computer techniques to develop, manipulate and analyze system models. Prerequisite: Mathematics 140, Computer Science 212 or Information Management Systems 229 and junior standing.

350-3 Small Business Management. Identification of small business, its importance and relationship to the United States economy and the opportunities and requirements unique to operation and management. Personal characteristics, interpersonal relationships, organizational systems, and decision-making processes are examined for their contribution to the success or failure of the firm. Prerequisite: junior standing or consent of department.

352-3 Management Science. An introduction to mathematical model building in organizations and the solution techniques commonly used to solve such models. Topical coverage includes decision theory, mathematical programming, project management, queuing models and simulation. Prerequisite: 208, 318, Mathematics 140 or equivalent and Computer Science 212 or Information Management Systems 229 or equivalent, junior standing or consent of department.

361-3 Applied Managerial Research. Design of research to assist managerial decision making. Concepts, tools, sources, and methods of research. Planning, collecting, organizing, evaluating, and presenting research data. Prerequisite: 202, 208, 304, and junior standing or consent of department.

385-3 Personnel and Human Resources Management. An introduction to the development, application, and evaluation of policies, procedures, and programs for the recruitment, selection, development, and utilization of human resources in an organization. Prerequisite: 304 or equivalent, introductory statistics, and junior standing or consent of department.

420-3 Database Management. Database planning; entity-relationship diagrams; relationed, network, and hierarchical data models; normalization theory; query languages; distributed databases; applications development.

421-3 Automated Information System Applications Development. Principles of information engineering; information strategy planning; business area analysis and design; construction; quality assurance; use of CASE technology. Prerequisite: 420.

431-3 Organizational Design and Structures. The study of modern theories of complex organizations. Particular emphasis is placed on open-systems perspectives of administrative theory and the adaption of the organization to a changing environment. Prerequisite: 341 and junior standing or consent of department.

453-3 Advanced Quantitative Models for Systems Analysis. A continuation of 352. Mathematical model building in organizations and solution techniques commonly used to solve such models. An extension of topics in deterministic and probabilistic modeling introduced in 352. Prerequisite: 352, junior standing or consent of department.

456-3 Building Decision Support and Expert Systems. Investigation of selected systems and computer based methods for aiding management decision-making. Topics include systems analysis applications, simulation, and decision models. Prerequisite: 345.

471-3 Seminar in Entrepreneurship. Investigation of selected special or advanced topics in seminar format. Topics may include but are not limited to entrepreneurship, small business analysis, or topics related to the ownership and management of a business. Activities will include library and field research, data analysis, report writing, and active participation in seminar presentations and discussions. Designed particularly for the student who has completed the three small business courses numbered 350 and has discussed personal small business or entrepreneurial objectives with the instructor prior to registration. Prerequisite: consent of department.

474-3 Management's Responsibility in Society. Analysis of the cultural, social, political, economic, and immediate environment of the organization. Particular emphasis is given to the manner in which the manager adapts to and is influenced by the environment and its conflicting demands. Prerequisite: senior standing or consent of department.

481-3 Administrative Policy. Development of organizational strategies and policies within environmental and resource limitations. Emphasis upon the application and integration of basic principles from all areas of business by case problem analysis, simulation exercises, and group participation. Not for graduate credit. Prerequisite: senior standing, 304, 318, Finance 330, Marketing 304, or equivalent and must be a business (not pre-business) major.

483-3 Advanced Production-Operations Management. An in-depth study of production and inventory management with a focus on preparation for the American Production and Inventory Control Society (APICS) certification examinations. Topics covered include planning for material and capacity requirements, scheduling, Theory of Constraints, Just-in-Time and Total Quality Management. Not for graduate credit. Prerequisite: 318 and junior standing or consent of department.

485-3 Organizational Change and Development. Analysis of problems in personnel management with emphasis on current trends and techniques. Case problems, special reports and experiential approaches are used

as a basis for examining ways of using an organizations' human resources to best advantage. Not for graduate credit. Prerequisite: 341, junior standing.

489-3 Seminar. Investigation of selected special or advanced topics in seminar format. Topics may include, but are not limited to: management responsibility in society, wage and salary administration, health services administration, data processing management, current issues in management, etc. Prerequisite: consent of department and must be a business (not prebusiness) major.

491-1 to 6 Independent Study. Utilizes special faculty resources to enable individually, the exploration of an advanced area of study through research by means of data analysis and/or literature search. Prerequisite: consent of department and must be a business (not prebusiness) major.

495-3 Internship in Management. Supervised work experience that relates to the student's academic program and career objectives. Not repeatable for credit. Prerequisite: junior standing and consent of department and must be a business (not prebusiness) major. Mandatory Pass/Fail.

Marketing (MKTG)

304-3 Marketing Management. Management of the firm's marketing function within a dynamic operating environment. Includes study of such functions as product development, promotion, channel selection, logistics, and market research. A C or better grade required in 304 before enrolling in any course for which 304 is a prerequisite. Prerequisite: junior standing or higher.

305-3 Consumer Behavior. Examines underlying psychological, sociological, and economic factors which influence consumer behavior. Studies the impact of marketing activities on society, consumerism and legislation affecting the marketplace. Prerequisite: junior standing or higher.

329-3 Marketing Channels. The methods and processes used in the distribution of consumer and industrial products and services. Emphasis is upon the ways in which certain basic distribution functions are carried out in the integrated channel system. The role of a variety of manufacturers, wholesalers and retailers as parts of this system is analyzed. Prerequisite: 304 and junior standing or higher.

336-3 International Business. Business activities of firms and social organizations are examined in an international environment. The course will examine the fundamental concepts, and principles of international business. It will focus on the international environment as the international dimension of marketing, financial, accounting, managerial, and production functions. Prerequisite: 304, junior standing or higher.

350-3 Small Business Marketing. Deals with principles involved in locating market opportunities and developing growth plans for businesses requiring a relatively low initial capital investment. Taught from the point of view of the owner-manager relying heavily upon case examples of successful entrepreneurship. Not approved as elective for marketing majors. Prerequisite: junior standing or higher.

363-3 Promotional Concepts. The role of promotional activities in the firm's marketing function: advertising, personal selling, sales promotion, and publicity. The relationship of consumer behavior to the area of promotion. Prerequisite: 304 and junior standing or higher.

380-3 Professional Sales. Analysis of professional selling activities and how they fit into the firm's promotional efforts. The course examines the dynamics of selling and the different settings in which selling occurs. The course emphasizes preparing the student to make sales presentations in business settings. Prerequisite: 304.

390-3 Marketing Research and Analysis. The basic procedures and theories appropriate to solving various types of marketing problems in the context of business organization and decision models. Prerequisite: 304 and Management 208 or equivalent and junior standing or higher and must be a business (not prebusiness) major or consent of department.

401-3 Retail Management. Designed to present the basic principles in decision areas such as location, layout, organization, personnel, merchandise control, sales promotion, advertising, etc. Retail merchandising through managerial perspective. Prerequisite: 304 and junior standing or higher.

435-3 International Marketing. Analysis of international operations. Emphasis on the factors influencing marketing to and within foreign countries and the alternative methods of operations open to international firms. Prerequisite: 304 and junior standing or higher.

438-3 Sales Management. Analysis of the management of the sales effort within the marketing system. Philosophies, concepts, and judgment criteria of the sales function in relationship to the total marketing program. Prerequisite: 304, Management 304, junior standing or higher.

439-3 Business to Business Marketing. Analysis of decision criteria related to the marketing of business to business products. Emphasis on team marketing, team selling, formulation of marketing mix factors and the behavioral relationships in contemporary organizations. Prerequisite: 304 and junior standing or consent of department.

452-3 Physical Distribution Management. Integration of physical distribution activities of the firm into a system. Transportation and location as elements of the system. Inventories and service as constraints upon the system. Planning, operation, organization, and management of the system. Prerequisite: 304 and junior standing or higher.

463-3 Advertising Management. Advertising from the viewpoint of business management. Develops an understanding of the role of advertising under various conditions. Problems of integrating advertising strategy into the firm's total marketing program. Prerequisite: 304 and 363 and junior standing or higher.

493-3 Marketing Policies. A comprehensive and integrative view of marketing policy formulation. Marketing decisions analyzed and discussed. Prerequisite: 329, 363, and 390 (not more than one to be taken concurrently) and junior standing or higher and must be a business (not prebusiness) major or consent of department.

495-3 Internship in Marketing. Provides the student an opportunity to participate in an internship program coinciding with areas of interest. Not for graduate credit. Mandatory Pass/Fail. Prerequisite: 304, 305, 363 and consent of department.

499-1 to 6 (1 to 3, 1 to 3) Marketing Insights. Provides the student an opportunity to participate in an independent study, or seminar coinciding with areas of interest. May be repeated for credit only when topics vary. Not for graduate credit. Prerequisite: junior standing or higher, and approval of the instructor and the department chair in the semester prior to enrollment and must be a business (not prebusiness) major or consent of department.

Mass Communication and Media Arts, College (MCMA)

101-1 Exploring Mass Communication and Media Arts. A special course designed for freshmen, new majors and students interested in the options open to them in the College of Mass Communication and Media Arts. Taught by the chairs, directors and the dean, this course will use demonstrations, guest speakers and discussions to detail the activities and opportunities available in the college. Students will do a career analysis of the options available within their chosen area of interest.

197-3 Learning to Learn. A college-level freshman-sophomore seminar to stress the necessity of communication skills and the development of professional attitudes and work habits.

201-3 Media in Society. Provides a critical basis for understanding the interrelationships between societal needs, communication institutions, and economic, political and cultural processes. Beginning with early communication systems, the course examines developments leading to our multi-media environment and how these developments impact our lives.

202-3 Visual Literacy. Students learn to interpret visual images, compose visual messages and evaluate the cultural impact of visual communication on contemporary society.

203-3 Critical Thinking Through Media Writing. Students will be asked to apply reasoning skills as they analyze examples of media writing. Students will also be asked to apply these reasoning skills to their own writing as they develop their ability to compose effective sentences, to construct sound arguments and to adapt their writing for different purposes and audiences. Prerequisite: successfully completing English 101 and 102, restricted to Mass Communication and Media Arts majors.

204-3 Alternative Media in a Diverse Society. (University Core Curriculum) The freedoms guaranteed in the First Amendment have resulted in a multitude of alternatives to the establishment media. These alternative media give voice to a range of communities ignored or suppressed by the dominant culture. Publications, alternative art spaces, film, radio and television messages and the groups and individuals who create them are examined. Not for graduate credit.

397-1 to 6 Special Interdisciplinary Study. Designed to offer and test new and experimental courses and series of courses within the College of Mass Communication and Media Arts. Prerequisite: consent of instructor.

497-1 to 6 Special Interdisciplinary Study. Designed to offer and test new and experimental courses and series of courses within the College of Mass Communication and Media Arts. Prerequisite: consent of instructor.

Mathematics (MATH)

A hand-held calculator with function keys appropriate to the course is required of each student in 108, 109, 111, 114, 139, 140, 141, 150, 250, 251, 282, and 283. The student should consult the instructor of the course about appropriate calculators.

107-3 Intermediate Algebra. Properties and operations of the number system. Elementary operations with polynomials and factoring. Elementary operations with algebraic fractions. Exponents, roots, and radicals. First and second degree equations and inequalities. Functions and graphing. Systems of equations and inequalities. Exponential and logarithmic functions. This course does not satisfy the University Core Curriculum mathematics requirement and it does not count toward the 120 hours needed for graduation. Mandatory Pass/Fail.

108-3 College Algebra. The algebra of functions (polynomials, rational, exponential, logarithmic), graphing, conic sections, solving equations including systems. Credit is not given for both 108 and 111. Prerequisite: 107 or two years of college preparatory mathematics including the content of algebra I and II. Students must present satisfactory placement scores or obtain the permission of the Department of Mathematics.

109-3 Trigonometry and Analytic Geometry. Trigonometric and inverse trigonometric functions, complex numbers, conic sections, polar coordinates. Credit is not given for both 109 and 111. Prerequisite: 108 or equivalent. Students must present satisfactory placement score or obtain the permission of the Department of Mathematics.

110-3 Non-Technical Calculus. (University Core Curriculum) The elements of differentiation and integration. The emphasis is on the concepts and the power of the calculus rather than on technique. It is intended to provide an introduction to calculus for non-technical students. Does not count towards the major in mathematics. No credit hours may be applied to fulfillment of any degree requirements if there is prior credit in Mathematics 140, 141 or 150. Prerequisite: 3 years of college preparatory mathematics including algebra I, algebra II and geometry. Students must present satisfactory placement scores or obtain the permission of the Department of Mathematics.

111-5 Precalculus. An intensive course in college algebra and trigonometry for students who plan to take Calculus I. The algebra of functions (polynomial, rational, exponential, logarithmic, trigonometric, inverse trigonometric), graphing, conic sections, solving equations including systems, complex numbers, polar coordinates. Not open to students with credit in 108 or 109. Prerequisite: three years of college preparatory mathematics, including algebra I, algebra II, and geometry. Students must present satisfactory placement scores or obtain the permission of the Department of Mathematics.

113-3 Introduction to Contemporary Mathematics. (University Core Curriculum) Elementary mathematical principles as they relate to a variety of applications in contemporary society. Exponential growth, probability, geometrical ideas and other topics. This course does not count towards the major in mathematics. Prerequisite: Mathematics 107 or 3 years of college preparatory high school mathematics including geometry and Algebra II. Students must present satisfactory placement scores or obtain the permission of the Department of Mathematics.

114-4 Algebraic and Arithmetic Systems. Whole numbers, integers, rational numbers, real numbers, numeration systems, algorithms, number theory, metric system, elementary algebra, probability. Successful completion of this course requires a passing grade on a basic skills test of minimal mathematical proficiency. Does not count towards the major in mathematics. Can not be used to satisfy the University Core Curriculum mathematics requirement. Prerequisite: Intermediate algebra or a second year of high school algebra or equivalent.

125-4 Technical Mathematics with Applications. Emphasizes the applications of algebra and trigonometry in technical fields. Topics in algebra include functions and graphs, systems of linear equations, quadratic equations, higher degree equations and variation. Topics in trigonometry include the trigonometric functions, laws of sines and cosines, complex numbers, exponential and logarithmic functions. Meets University Core Curriculum requirement in mathematics for Applied Sciences and Arts students. Prerequisite: Mathematics 107 or two years of high school algebra or equivalent.

139-3 Finite Mathematics. Set concepts and operations, combinations, permutations, elementary probability theory including Bayes formula, linear systems of equations, matrix algebra, Gauss-Jordan row reduction, introduction to linear programming. This course does not count towards the major in mathematics. Prerequisite: Mathematics 107 or two years of high school algebra. Student must present satisfactory placement scores or obtain the permission of the Department of Mathematics.

140-4 Short Course in Calculus. Techniques of differentiation, increasing and decreasing functions, curve sketching, max-min problems in business and social science; partial derivatives, LaGrange multipliers, elementary techniques of integration. Credit hours for both 140 and 141 may not be applied to fulfillment of degree requirements. No credit hours for 140 may be applied to fulfillment of degree requirements if there is prior credit in 150. This course does not count towards the major in mathematics. Prerequisite: Mathematics 107 or two years of high school algebra. Student must present satisfactory placement scores or obtain the permission of the Department of Mathematics.

141-3 Short Course in Calculus for Biological Sciences. Basic techniques of differentiation and integration. Population and organism growth problems solved by using calculus. Translation of problems in the biological sciences into mathematical problems. Credit hours for both 141 and 140 may not be applied to fulfillment of degree requirements. No credit hours for 141 may be applied to fulfillment of degree requirements if there is prior credit in 150. This course does not count towards the major in mathematics. Prerequisite: 111 or equivalent. Students must present satisfactory placement scores or obtain the permission of the department.

150-4 Calculus I. Treatment of the major concepts and techniques of single-variable calculus, with careful statements but few proofs. Differential and integral calculus of the elementary functions with associated analytic geometry. If there is prior credit in 140 or 141 only 2 hours credit for 150 may be applied to graduation requirements. Prerequisite: 111 or equivalent with a grade of C or better. Students must present satisfactory placement scores or obtain the permission of the department.

215-3 Discrete Structures I. (The same as Computer Science 215.) Number systems and computer arithmetic. Sets, relations, and functions. Boolean algebra with applications to computer logic design. Elementary matrix operations. Combinations, permutations, and counting techniques. Prerequisite: 108 or equivalent.

221-3 Introduction to Linear Algebra. Vector spaces, linear functions, systems of equations, dimensions, determinants, eigenvalues, quadratic forms. Prerequisite: 150 with a grade of C or better.

250-4 Calculus II. Develops the techniques of single-variable calculus begun in Calculus I and extends the concepts of function, limit, derivative and integral to functions of more than one variable. The treatment is intuitive, as in Calculus I. Techniques of integration, introduction to multivariate calculus, elements of infinite series. Prerequisite: 150 with a grade of C or better. Students must present satisfactory placement score or obtain the permission of the department.

251-3 Calculus III. Further topics in calculus. Definite integrals over solid regions, applications of partial derivatives, vectors and vector operations, derivatives of vector functions, line integrals. Green's theorem. Prerequisite: 250 with a grade of C or better.

257-1 to 12 Concurrent Work Experience. As an instructional aide, the student will do tutoring under the direction of an established teacher and under the supervision of a representative of the Department of Mathematics. Prerequisite: consent of department. Mandatory Pass/Fail.

282-3 Introduction to Statistics. Designed to introduce beginning students to basic concepts, techniques, and applications of statistics. Topics include the following: organization and display of data, measures of location and dispersion, elementary probability, statistical estimation, and parametric and nonparametric tests of hypotheses. Prerequisite: 108 or equivalent.

283-3 Introduction to Applied Statistics. This course is experiment motivated, uses real-work data, and computer analysis of data. Statistical concepts discussed are descriptive statistics, elementary probability, expect-

tation, sampling distributions, statistical estimation and testing, confidence intervals, correlation and regression, and contingency tables. The student is given experience in writing reports of experiments. Prerequisite: 140.

302-3 Mathematical Communication and the Transition to Higher Mathematics. A course in communicating mathematical ideas with a special emphasis on reading, writing, and critiquing mathematical proofs. Topics covered include logic, proofs, set theory, relations, functions. Additional illustrative topics will be drawn from linear algebra, number theory, complex variables, and geometry. Prerequisite: Mathematics 221 and 250.

305-3 Introduction to Ordinary Differential Equations I. Solution techniques for differential equations with emphasis on second order equations, applications to physical sciences, series solutions. Prerequisite: 250 with a grade of C or better.

306-3 Introduction to Ordinary Differential Equations II. Laplace transforms and Fourier series with applications to ordinary and partial differential equations. Systems of first order differential equations, stability. Prerequisite: 305 or consent of instructor.

311-4 Teaching of Secondary Mathematics. The nature and objectives of the secondary mathematics curriculum. Particular attention is given to the means of introducing new ideas into the high school program. For students preparing to be certified teachers of secondary mathematics. Three lectures and two laboratory hours per week. Does not count toward a mathematics major in the College of Liberal Arts or in the College of the Science. Prerequisite: 319, 319e, and 335.

314-3 Geometry for Elementary Teachers. Congruence, similarity; parallelism, perpendicularity; measurement; area, volume; ratio and proportion; constructions; proof. May not be used to satisfy requirements for a mathematics major. Prerequisite: 114 and a passing grade on a basic skills test of minimal mathematical proficiency.

319-3 Introduction to Abstract Algebra. Basic properties of groups and rings: Binary operations, groups, subgroups, permutations, cyclic groups, isomorphisms, Cayley's theorem, direct products, cosets, normal subgroups, factor groups, homomorphisms, rings, integral domains. Prerequisite: 221; plus for secondary education majors, 302 or concurrent enrollment in 319e.

319E-1 Modern Algebra as Applied to the Secondary Schools. Two hours per week. The applicability of the concepts of modern algebra, particularly the field axioms and the function concept, to the secondary curriculum. Prerequisite: concurrent enrollment in 319. Mandatory Pass/Fail.

335-3 Concepts of Geometry. Introduction to the foundations of Euclidean and non-Euclidean geometry with an emphasis on axiom systems, models, and counterexamples. Topics include metric geometry, betweenness, plane separation, congruence, absolute plane geometry, the critical function, and parallelism. Prerequisite: 221 or 250; for secondary education majors concurrent enrollment in Mathematics 302 is highly recommended.

349-3 Introduction to Discrete Mathematics. Numbers, sets, relations and functions; elementary enumeration; introduction to graph theory; logic, partially ordered sets and Boolean algebra; mathematical induction; recurrence relations. Prerequisite: 221.

352-3 Theory of Calculus. An introduction to understanding and writing proofs in mathematical analysis, through a careful study of limits, continuity, the derivative, and the integral. Prerequisite: 221, 250; plus for secondary education majors, 302 or concurrent enrollment in 352e.

352E-1 Analysis as Applied to the Secondary Schools. Two hours per week. Sequences, series, infinite decimals, continuity. Applications to the secondary curriculum. Prerequisite: concurrent enrollment in 352. Mandatory Pass/Fail.

361-3 Numerical Calculus. (Same as Computer Science 361.) Algorithms for the solution of numerical problems encountered in scientific research work with special emphasis on the use of digital computers. Includes an elementary discussion of error, polynomial interpolation, quadrature, solution of nonlinear equations and linear systems, solution of differential equations. Prerequisite: 221 and 250 and Computer Science 202 or equivalent programming proficiency.

380-3 Elements of Probability. Probability as a mathematical system. Axioms, permutations and combinations, random variables, generating functions, limit theorems, and Monte Carlo procedure. Prerequisite: 250 and Computer Science 202.

390-3 to 6 Topics in Contemporary Mathematics. Content will vary according to the instructor. The seminar will introduce students to new and developing areas of mathematics, such as Chaos, Fractals, Algorithms, Fourier Analysis, Difference Equations, etc. Prerequisite: intended for students who have completed Mathematics 150, 221, 250 and either 251 or 305. Other prerequisites may apply. May be repeated as topics vary.

395-1 to 6 Readings in Mathematics. Supervised reading in selected subjects. Prerequisite: 3.00 grade point average in mathematics and consent of chair.

400-3 History of Mathematics. An introduction to the development of major mathematics concepts. Particular attention given to the evolution of the abstract concept of space, to the evolution of abstract algebra, to the evolution of the function concept, and to the changes in the concept of rigor in mathematics from 600 B.C. Does not count toward a mathematics major in the College of Liberal Arts or in the College of Science. Prerequisite: 319 and 352 or consent of instructor.

405-3 Intermediate Ordinary Differential Equations. Topics selected from linear systems, existence and uniqueness for initial value and boundary value problems, oscillation, and stability. Prerequisite: 305.

406-3 Eigenfunction Analysis. Discrete and continuous models for the vibrating string; separation of variables and eigenfunction analysis; inner product spaces; operators on inner product spaces; the spectral theorem for Hermitian operators on finite dimensional spaces with applications; the Courant-Fisher max-min characterization of eigenvalues; the spectral theorem for compact Hermitian operators with applications to Sturm-Liouville boundary value problems and Fredholm integral equations. Prerequisite: 221 and 305.

407-3 Introduction to Partial Differential Equations. First order linear and quasilinear partial differential equations, characteristics, second order linear partial differential equations, classification of types, boundary value and initial value problems, well posed problems, the wave equation, domain of dependence, range of influence, Laplace's equation and Dirichlet problems, the maximum principle. Poisson's integral, fundamental solution of the heat equation. Prerequisite: 251, 305.

409-3 Introduction to Fourier Analysis. The Fourier synthesis and analysis equations for periodic functions on the reals and the integers; convolution; the calculus for finding Fourier transforms; operators associated with Fourier analysis; the FFT and FHT algorithms and fast convolution; generalized functions; the sampling theorem; wavelets; selected applications of Fourier analysis to partial differential equations, probability, music synthesis, time series, image processing, diffraction. Prerequisite: 221 and 305.

411-1 to 6 (1 to 3, 1 to 3) Mathematical Topics for Teachers. Variety of short courses in mathematical ideas useful in curriculum enrichment in elementary and secondary mathematics. May be repeated as topics vary. Does not count toward a mathematics major.

412-3 Problem Solving Approaches to Basic Mathematical Skills. Content of basic skills at all levels of education and the development of these skills from elementary school through college; emphasis on problem solving and problem solving techniques; determination of student skills and proficiency level. Credit may not be applied toward degree requirements in mathematics. Prerequisite: 314 or equivalent.

417-3 Applied Matrix Theory. Matrix algebra and simple applications, simultaneous linear equations, linear dependence and independence of vectors, rank and inverses, determinants, eigenvalues and eigenvectors, quadratic forms, applications. This course may not be counted towards a graduate degree in mathematics. Prerequisite: 221.

419-3 Introduction to Abstract Algebra II. Solvable groups, maximal ideals, basis and dimension, elementary field extension theory, splitting fields, geometric constructions, elementary Galois theory, Galois group of a polynomial, solution of equations in radicals. Prerequisite: 319 or consent of instructor.

421-3 Linear Algebra. Fields, vector spaces over fields, triangular and Jordan forms of matrices, dual spaces and tensor products, bilinear forms, inner product spaces. Prerequisite: 221.

425-3 Theory of Numbers. Properties of integers, primes, divisibility, congruences, quadratic forms, diophantine equations, and other topics in number theory. Prerequisite: 319 or consent of department.

430-3 Introduction to Topology. Study of continuity, convergence, separation and compactness in the context of metric spaces and topological spaces. Prerequisite: 302 or 352 or consent of the department.

435-3 Elementary Differential Geometry. An introduction to modern differential geometry through the study of curves and surfaces in \mathbb{R}^3 . Local curve theory with emphasis on the Serret-Frenet formulas; global curve theory including Fenchel's theorem; local surface theory motivated by curve theory; global surface theory including the Gauss-Bonnet theorem. Prerequisite: 221 and 251.

447-3 Introduction to Graph Theory. (Same as Computer Science 447.) Introduction to theory of graphs, digraphs, and networks and applications to electrical systems and computer science. Topics include blocks and cut-points, Eulerian graphs, trees, cycle and cocycle spaces, planarity and Kuratowski's Theorem, connectivity and Menger's Theorem, Hamiltonian graphs, colorability and Heawood's Theorem, flows in networks and Ford-Fulkerson Theorem, critical path analysis. Prerequisite: 349 or consent of instructor.

449-3 Introduction to Combinatorics. (Same as Computer Science 449.) An introduction to combinatorial mathematics with computing applications. Topics include selections and arrangements, generating functions, recursion, inclusion and exclusion, coding theory, block designs. Prerequisite: 349 or consent of instructor.

450-3 Methods of Advanced Calculus. Sequences and series of functions; partial differentiation; Jacobians; the implicit function theorem; the classical differential operators in general curvilinear coordinates; line, surface, and volume integrals, the divergence and Stokes' theorems; transformation of variables in multiple integrals; integrals containing a parameter. Prerequisite: 251.

452-3 Introduction to Analysis. A rigorous development of one-variable calculus concepts including the real numbers, sets, limits of sequences, continuity of functions, differentiation, Riemann-Stieltjes integration, series of functions at a more advanced level than 352. Prerequisite: 251.

455-3 Introduction to Complex Analysis and Applications. Complex numbers, analytic functions, line integrals, the Cauchy-Goursat theorem and its implications, power series. Laurent series, polar and essential singularities, analytic continuation, contour integration, residue theorem, conformal mapping. Prerequisite: 251.

457-3 Methods of Quantitative Analysis. (Same as Business Administration 451.) Introductory survey of basic quantitative methods necessary for graduate study in business; designed for students with deficiencies in methods of quantitative analysis. Course consists of introduction to calculus, matrix algebra, and probability. Extensive use is made of business examples. Prerequisite: enrollment in Master of Business Administration program or consent of department; Math 108 or equivalent.

458-3 Statistical Methods in Business and Industry. Basic probability concepts; random variables; univariate and joint distributions; Bernoulli, binomial, Poisson, normal, exponential, gamma, chi-square, t and F distributions; sampling distributions; estimation by the method of moments and the method of maximum likelihood; confidence intervals; hypothesis tests for normal, Bernoulli and Poisson distributions; simple regressions and analysis of variance problems. Prerequisite: 140 or equivalent and graduate standing in College of Business and Administration or the College of Engineering and Technology.

460-3 Transformation Geometry. Geometry as the study of properties invariant under congruences, similarities, affine transformations, and projectivities. Prerequisite: 221 and 319.

471-3 Introduction to Optimization Techniques. (Same as Computer Science 471.) Nature of optimization problems. General and special purpose methods of optimization, such as linear programming, classical optimization, separable programming, integer programming, and dynamic programming. Prerequisite: 221, 250. Computer Science 202.

472-3 Linear Programming. (Same as Computer Science 472.) Nature and purpose of the linear programming model. Development of the simplex method. Application of the model to various problems. Duality theory. Transportation. Assignment problems. Postoptimality analysis. Prerequisite: 221 and Computer Science 202.

473-3 Reliability Theory. Formulation of the concept of reliability in terms of probability theory. Failure distributions and failure rates. Elements of renewal theory. Age and block replacement policies, optimal replacement policies, optimal replacement policies for classes of failure distributions. Prerequisite: 480 or 483, or consent of department.

475-6 (3,3) Numerical Analysis. (Same as Computer Science 464.) An introduction to the theory and practice of computation with digital computers. Topics include the solution of nonlinear equations, interpolation and approximation, solution of systems of linear equations, numerical integration, solution of ordinary differential equations, computation of eigenvalues and eigenvectors and solution of partial differential equations. Prerequisite: (a) 221 and 250 and Computer Science 202 or equivalent programming proficiency; (b) 305 and 475a.

480-4 Introduction to Probability. A comprehensive introduction to probability theory at a level suited to upper-division undergraduates and first-year graduate students. Topics include: event spaces, probability functions, combinatorics, generating functions, conditional probability, independence, random variables, probability distributions, expectations, moments, characteristic functions, inversion formulas, sums of independent random variables, the multivariate normal distributions, the central limit theorem, the weak and strong laws of large numbers. Prerequisite: 251.

481-3 Elements of Stochastic Processes. An introduction, including normal, Poisson, and Markov processes. Prerequisite: 380 or 480.

483-4 Mathematical Statistics in Engineering and Physical Sciences I. Introduction to statistical theory with applications in engineering and the physical sciences. Probability: axioms, distributions including noncentral distributions, moments and moment generating functions, order statistics. Statistical inference: point and interval estimation, testing hypotheses, likelihood ratio tests. Prerequisite: 250.

484-4 Mathematical Statistics in Engineering and Physical Sciences II. An introduction to linear models and the design of experiments with applications in engineering and the physical sciences. Analysis of the general linear model, basic designs and criteria, response surface analysis and factor analysis. Statistical computation. Prerequisite: 483 and 221, or consent of instructor.

485-3 Applied Statistical Analysis. Elements of survey sampling including simple random and stratified sampling, ratio and regression estimates; elements of nonparametric methods including the sign, Wilcoxon and Kruskal-Wallis tests; analysis of categorical data including loglinear models. Prerequisite: 480 or 483 or consent of instructor.

495-1 to 6 Special Topics in Mathematics. Individual study or small group discussions in special areas of interest under the direction of a member of the faculty. Prerequisite: consent of chair and instructor.

Mechanical Engineering (ME)

Safety glasses, an electronic calculator, and textbooks are required of all mechanical engineering students.

101A-0 Computer Tools for Engineering Reporting. Use of PC-based word-processor, spreadsheet and data management programs for engineering reporting. Statistical interpretation of experimental data. Proficiency in using each type of reporting skill-tool will be required. Pass/Fail grading. Prerequisite: enrollment in mechanical engineering.

101B-2 Introduction to Mechanical Engineering. Introduction to engineering fields and to mechanical engineering. Activities which provide the student with tools for greater academic success, professional awareness, teamwork and engineering success are explored. Introduction to design principles and creativity. Use of creativity and design principles in class projects. Prerequisite: enrollment in mechanical engineering, Mathematics 111 or equivalent, Mechanical Engineering 101a or concurrent enrollment.

110-3 Introduction to Engineering Design and Reporting. Introduction to the design process. Use of software for engineering practice: word processor, spreadsheet and equation solver for preparing design results. Introduce students to design principles, conceptual design and reporting design results. Statistical analysis of data. Prerequisite: Mathematics 111 or equivalent.

261-3 Mechanical Engineering Dynamics. Fundamentals of particle and rigid body dynamics. Kinematics and kinetics of a single particle and system of particles. Application of Newton's laws and energy and moment principles in solving problems involving particles or rigid bodies in planar motion. Introduction to kinetics of rigid bodies in three dimensions. Prerequisite: Engineering 260a.

301-3 Engineering Thermodynamics II. Combined first and second law analysis; availability and reversibility. Third Law. General thermodynamic relations. Reactive systems. Thermodynamic equilibrium. Phase Rule. Applications. Thermodynamics of one dimensional fluid flow. Prerequisite: Engineering 300.

302-3 Heat Transfer Fundamentals. Fundamentals of heat transfer by conduction, convection and radiation. Applications of theory to engineering systems. Prerequisite: Mathematics 305, Engineering 260b, 313.

303-2 Introductory Measurement, Instrumentation, and Device Control Laboratory. Experiments applicable to the use of modern microprocessor based electronic equipment for data acquisition, interpretation, and control in mechanical devices. Discussion of basic electronics applications. Prerequisite: Engineering 335.

309-2 Mechanical Analysis and Design. Kinematics and kinetics of inter-connected bodies. Principles of kinematics and force analyses of planar machinery. Analytical and numerical techniques for finding dis-

placement, velocity and acceleration. Design of linkage, cam-follower mechanisms and gear trains. Prerequisite: 261 and Engineering 222.

310-3 Mechanisms/Kinematics. Introduction to the kinematics of machines. Topics include absolute and relative displacement, velocity, and acceleration and calculation methods. Applications include linkages, gears, gear train, cams, rotary to/from linear motion transformation mechanisms, steady-to-intermittent motion mechanisms. Introduction of general purpose program for modeling of mechanical systems. Prerequisite: Engineering 222a,b and 260b.

361-1 Engineering Economics. Present, future and annual worth, rate of return and incremental rate of return methods of comparing alternative engineering projects and designs; bonds, depreciation and tax considerations. Application of basic statistical concepts and spreadsheets for problem solutions. Professional engineering examinations include these course materials. Prerequisite: 101a,b or equivalent.

392-1 to 6 Mechanical Engineering Cooperative Education. Supervised work experience in industry, government or professional organization. Students work with on-site supervisor and faculty advisor. Reports are required from the student and the employer. Hours do not count toward degree requirements. Mandatory Pass/Fail. Prerequisite: sophomore standing.

393-1 to 12 Internship in Mechanical Engineering. Credit for documented work experience as an intern in an engineering occupation or an engineering-related occupation. Work assignments must have been professional service in the mechanical engineering field. Hours do not count toward degree requirements. Mandatory Pass/Fail. Prerequisite: satisfactory completion of twelve hours of Engineering and/or Mechanical Engineering courses.

400-3 Power and Refrigeration Cycles. Use of engineering thermodynamics in analysis of power and refrigeration cycles. Detailed treatment of various gas and vapor power cycles including combined gas and steam cycles. Thermodynamics of combustion. Gas and vapor refrigeration cycles. First and Second Law analysis and turbo-machinery. Prerequisite: Engineering 300.

401-1 Thermal Measurements Laboratory. Study of basic measurements used in the thermal sciences. Calibration techniques for temperature and pressure sensors. Thermal measurements under transient and steady-state conditions. Applications include conduction, convection and radiation experiments. Uncertainty analysis. The handling and reduction of data. Prerequisite: 302, 303.

402-3 Heat Exchange Equipment Design. Engineering design of heat exchange equipment such as boilers, evaporators, cooling towers, furnaces and systems involving combinations of conduction, convection and radiation mechanisms. Emphasis is placed on application of basic principles of heat transfer and fluid mechanics to the design of heat exchange equipment. Students are encouraged to work open-ended problems with multiple possible solutions. Prerequisite: 302, Engineering 222a,b and 313.

403-1 Mechanical Engineering Measurements Laboratory. Laboratory to familiarize students with the use of instruments to measure time, distance, velocity, acceleration, strain, fluid flow, and turbulence. Instruments include micrometers, laser distance meters, stroboscopes, oscilloscopes, incremental rotary encoder, LVDT, load cells, accelerometers, analog/digital convertors, pressure transducers, and related equipment. Prerequisite: 303, Engineering 311.

404-4 Optimization of Process Systems. Simulation and optimization of process systems based upon engineering science and economic fundamentals. Analysis and correlation of experimental engineering data and use of correlated data in simulation, design and decision making. Design of systems using economics and continuous and discrete optimization methods encountered in engineering practice. Use of the computer is required. Prerequisite: Engineering 361, Mathematics 305 and senior standing in engineering.

405-3 Internal Combustion Engines and Gas Turbines. Operation and performance characteristics of Otto, Diesel, Wankel engines and gas turbines. Methods of engine testing, types of fuels and their characteristics, fuel metering systems, engine combustion analysis as related to engine performance, fuel characteristics and air pollution, exhaust gas analysis, and air pollution control. Prerequisite: Engineering 300.

406-3 Thermal Systems Design. Applications of the principles of engineering analysis to the design of thermal systems. Consideration of such systems as refrigeration, air conditioning, spacecraft thermal control and cogeneration. Numerical analysis and solution of an open-minded design problem. Prerequisite: 402 and Engineering 351.

408-3 Energy Conversion Systems. Principles of advanced energy conversion systems; nuclear power plants, combined cycles, magnetohydropower, cogeneration (electricity and process steam), and heat pumps. Constraints on design and use of energy conversion systems; energy resources, environmental effects, and economics. Prerequisite: 301 or 400.

410-3 Applied Chemical Thermodynamics and Kinetics. Designed for students interested in chemical and environmental processes and materials science. Topics covered include applications of the Second and Third Laws of Thermodynamics, solution theory, phase equilibria, sources and uses of thermodynamic data, classical reaction rate theory, kinetic mechanisms and the determination of rate-determining steps in chemical reactions. Prerequisite: Chemistry 200, 201, Engineering 300 or consent of instructor.

411-2 Manufacturing Methods for Engineering Materials. Overview of manufacturing processes with emphasis on the fabrication of materials from the processing and equipment viewpoint. This course presents a broad study of the many manufacturing processes utilized in the production of a wide variety of products and components. Insight into the multitude of processing factors which influence the practical design of manufactured parts to achieve the advantages of maximum economy, accuracy and automation in everyday production. Not for graduate credit. Prerequisite: Engineering 311 and 312.

414-3 Noise and Vibration Control. Principles of engineering acoustics and vibration and their application to noise and vibration control techniques. Laboratory experience demonstrates techniques for control and reduction of vibration and noise. Prerequisite: 436 and consent of instructor.

416-3 Air Pollution Control. Engineering control theory, procedure, equipment, and economics related to control of particulate, gaseous, and toxic air emissions. The environmental impacts due both to controlling and not controlling emissions are considered. Understanding of the basics is evaluated as students design control equipment, specify and troubleshoot control systems and predict the impacts for each major type of control system. Prerequisite: Senior standing.

418-1 Air Quality Laboratory. This laboratory consists of design, construction, and use of systems to measure and analyze ambient atmospheric pollution. Safety glasses required. Prerequisite: concurrent enrollment in 416.

419-3 Hazardous Waste Incineration. Incineration techniques, procedures and systems are presented for solid waste disposal and for remedial site clean-up activities. This includes regulations, waste handling, emission controls and residue disposal. Thermodynamics, chemistry and equipment are discussed, including heat recovery. Prerequisite: 416 or consent of instructor.

422-3 Applied Fluid Mechanics for Mechanical Engineers. Applications of fluid mechanics in internal and external flows. The mathematical basis for inviscid and viscous flows calculations is developed with application to pipe and duct flows; external flow about bodies; drag determination; turbomachinery; and reaction propulsion systems. Semester design project of a fluid mechanical system. Prerequisite: Engineering 300, 313 and Mathematics 305.

423-3 Compressible Flows. Foundation of high speed fluid mechanics and thermodynamics. One-dimensional flow, isentropic flow, shock waves and nozzle and diffuser flows. Flow in ducts with friction and heat transfer. Prandtl-Meyer flow. Compressibility effects in reaction propulsion systems. Semester design project. Prerequisite: Engineering 300, 313.

430-3 Kinematic Synthesis. Kinematic synthesis of linkages, single loop and multiple loop mechanisms, and geared linkages. Vector synthesis of spatial mechanism and its computer simulation. Prerequisite: 310.

435-3 Design of Mass Transfer Processes. Design principles of mass transfer processes. The rate mechanism of molecular, convective, and interphase mass diffusion. The design of selected industrial mass transport process operations such as absorption, humidification, water-cooling, drying, and distillation. Prerequisite: 302, Engineering 313.

436-3 Mechanical Engineering Control. Analysis and design of controls for mechanical engineering systems: mechanical, electrical thermal, fluid and combinations of these. Prerequisite: Engineering 260b, 300, 335, 351, Mathematics 305.

437-1 Mechanical Engineering Controls Laboratory. Application of control principles to mechanical engineering systems. Speed and position control using computer-based instrumentation. Pneumatic control. Temperature and flow sensing and control. Automatic control of servo systems. Process control and Programmable Logic Controller (PLC) applications. Prerequisite: 436 and senior standing.

440-3 Heating, Ventilating, and Air Conditioning Systems Design. Principles of human thermal comfort. Heating and cooling load analysis. HVAC system design. Air conditioning processes. Prerequisite: 302, Engineering 300.

442-3 Passive Solar Design. Design of solar heating systems for residence with emphasis on passive systems. Heat flow and heat loss. Estimating heat loss and heating requirements of buildings. Energy conserving building design. Predicting performance and economics of a system. Prerequisite: 302, Engineering 300.

443-4 Engineering Design. Mechanical design of process systems including costing and scheduling. Project design definition may include layouts, instrumentation, electrical systems, fluid flow, piping, heat exchange equipment, motors, pressure vessels, pumps, compressors, and concrete and steel structure design and/or specification. Cost factors leading to an optimal system design will be considered. Not for graduate credit. Prerequisite: senior standing in mechanical engineering.

446-3 Energy Management. Fundamentals and various levels of analysis for energy management of commercial buildings and industrial processes and buildings. Use of energy management systems and economic evaluations are required in course projects. Prerequisite: 302, Engineering 300 and 313.

462-3 Physical Metallurgy. Structure of metals. Dislocation theory and plasticity. Solid state diffusion. Thermodynamics of solutions and phase diagrams. Phase transformations. Fracture mechanics. Creep and fatigue. Prerequisite: Engineering 312.

463-3 Introduction to Ceramics. Structure and physical properties, mechanical properties, processing and design of ceramics. Prerequisite: Engineering 312 or equivalent.

470-3 Mechanical System Vibrations. Linear Vibration analysis of mechanical systems. Design of mechanical systems to include effects of vibration. Prerequisite: Engineering 260b and 351, Mathematics 305.

472-3 Materials Selection for Design. Interaction of material design process with material selection criteria. Comparison of materials properties, processes, and fabrication. Project work includes design models, material selection rationale, oral presentation of projects, construction of mock-up models, and theoretical design problems in the area of the student's specialization. Prerequisite: Engineering 222a,b, 312.

475-3 Machine Design I. Design of machines using bearings, belts, clutches, chains and brakes. Develops application of the theory of fatigue, power transmission and lubrication to the analysis and design of machine elements. Prerequisite: Engineering 222a,b, 311 and 351.

476-3 Machine Design II. Design of machines using gears, springs, screws and fasteners, and adhesives. Matching power sources to driven machines. Prerequisite: 475.

477-3 Fundamentals of Computer-Aided Design and Manufacturing. Introduction to the concepts of computer-aided design and manufacturing (CAD/CAM). Subjects include computer graphics, geometric modeling, engineering analysis with FEM, design optimization, computer numerical controls, project planning, and computer integrated manufacturing. (CIM). Students are required to use computer packages for projects. Prerequisite: 475 or consent of instructor.

492-1 to 5 Special Problems in Engineering. Engineering topics and problems selected by either the instructor or the student with the approval of the instructor. Five hours maximum course credit. Not for graduate credit. Prerequisite: senior standing and consent of instructor.

495-4 (1,3) Mechanical Engineering Design. (a) Project development skills, feasibility and cost-benefit analysis, ethical issues, professionalism, preliminary design, identification of tasks, assignment of tasks to project team members, coordination of interdisciplinary team effort, development of final proposal, oral presentation of final proposal. Prerequisite: Senior standing in mechanical engineering, 301, 400 or 310, Engineering 351, 361, (b) Developmental of the final design, hardware implementation of the final design (if the project warrants), documentation of all stages of design, project coordination, documentation of the testing and evaluating of the design, cost estimating, scheduling, and written, oral, and poster presentation of the final design. Not for graduate credit. Prerequisite: 495a.

Medical Education Preparation (MEDP)

400-1 to 6 (1 per semester) MEDPREP Seminar. Seminar on social, professional, and scientific issues of interest to students planning a career in medicine or dentistry. Topics: (a) orientation; (b) medical/dental seminar. Required of MEDPREP participants. Prerequisite: restricted to MEDPREP students. Must be taken in a,b sequence. Mandatory Pass/Fail.

401-1 to 18 (1 to 2 per topic) MEDPREP Basic Skills. Focus on skills critical for academic success in preprofessional and professional training. Topics: (a) learning skills; (b) science process skills (P/F only); (c) quantitative skills (P/F only); (d) perceptual motor skills; (e) interpersonal skills; (f) reasoning in reading and writing I; (g) reasoning in reading and writing II; (h) reasoning in reading and writing III; (i) other. Topic (a) required of all students. Not for graduate credit. Prerequisite: restricted to MEDPREP students only.

402-1 to 12 (1 to 2 per topic) MEDPREP Special Problems. Seminars, workshops, lectures, and field experiences related to preparing the student for medical/dental school and careers in medicine or dentistry. Topics: (a) MCAT/DAT orientation; (b) research seminar; (c) clinical experience; mandatory pass/fail (d) independent research; (e) independent readings; (f) other. Not for graduate credit. Prerequisite: restricted to MEDPREP students.

403-1 to 33 (1 to 3 for sections a,b,c,d,e,f, and i; 1 to 6 for sections g and h) Medprep Biology Problem-Solving. Depending on individual need content will be remedial, supplementary to concurrent Biological Science courses or additional permitting acceleration. Topics: (a) medical genetics; (b) anatomy; (c) cardiovascular physiology; (d) embryology; (e) immunology; (f) endocrinology; (g) biology review; (h) neural science; (i) biology problem solving. Not for graduate credit. Prerequisite: restricted to MEDPREP students.

404-1 to 18 (1 to 3 per topic) MEDPREP Chemistry Review. Content may be remedial, supplemental to concurrent preprofessional chemistry courses; additional permitting acceleration, or preparational for the MCAT. Topics (a) inorganic review; (b) inorganic; (c) organic review; (d) organic; (e) biochemistry; (f) chemistry problems solving. Not for graduate credit. Prerequisite: restricted to MEDPREP students.

405-1 to 9 (1 to 6 per topic a, 1 to 3 for topic b) MEDPREP Physics Review. Content may be remedial, supplemental to concurrent preprofessional physics courses, additional permitting acceleration, or preparational for the MCAT. Topics: (a) physics review; (b) physics problem solving. Not for graduate credit. Prerequisite: restricted to MEDPREP students.

Microbiology (MICR)

201-4 Elementary Microbiology. Basic concepts of microbiology, classification, metabolic activity and the effect of physical and chemical agents on microbial populations. Host-parasite interactions. Infectious agents, methods of transmission and control. Three hours lecture and three hours laboratory per week. Spring semester. Prerequisite: for students of Allied Health Careers, Dental Hygiene, Dental Technology, Respiratory Therapy, Health Care Management, Animal Science and others with consent of instructor.

202-2 Human Genetics and Human Health. Same as Zoology 202. (University Core Curriculum) Acquaints the student with the role played by genetic information in human development and disease. Discussion topics will include genetics and human diversity, the interaction of genetic information and the environment, the concepts of genetic disease, the mechanisms and ethics of gene therapy and the possibilities of manipulating the genetic material.

301-4 Principles of Microbiology. Morphology, structure, metabolism, population dynamics and heredity of the microorganisms with emphasis on pure culture methods of study of bacteria, viruses and related organisms. Three hours lecture, three hours laboratory. Fall semester. Prerequisite: one year of college chemistry and Biology 200a, or Plant Biology/Zoology 115 or Zoology 118.

302-3 Molecular Biology. Molecular structure, dynamics, and genetics of living cells and viruses, with particular attention to the transfer of biological information. Spring semester. Prerequisite: 301 or Biology 305.

403-3 Medical Microbiology Lecture. A survey of the more common bacterial, mycotic and viral infections of humans with particular emphasis on the distinctive properties, pathogenic mechanisms, epidemiology, immunology, diagnosis and control of disease-causing microorganisms. Three hours lecture. Spring semester. Prerequisite: 301.

405-3 Clinical Microbiology. This course will be offered in Springfield only. A comprehensive course for health science professionals covering the biology, virulence mechanisms, and identification of infectious agents important in human disease and host-defense mechanisms. Clinical applications are emphasized. Three hours lecture. Prerequisite: 301 or equivalent.

421-3 Biotechnology. Topics covered will include the genetic basis of the revolution in biotechnology, medical applications including genetic screening and therapeutic agents, industrial biotechnology and fermentation, and agricultural applications. Three hours lecture. Fall semester. Prerequisite: 302.

425-3 Biochemistry and Physiology of Microorganisms Lecture. Chemical composition, cellular structure, and metabolism of microorganisms. Fall semester. Prerequisite: organic chemistry.

441-3 Virology Lecture. General properties; classification and multiplication of bacterial and animal viruses; lysogeny; immunological and serological reactions; relation of viruses to cancer; consideration of selected viral diseases of animals. Prerequisite: 301 and 302.

444-2 Risk Assessment for Genetics and Medicine. A lecture-discussion course on the use of Bayesian probability to assess risks in human genetics and medicine. Includes basic laws of probability, pedigree analysis, the interpretation of laboratory tests and basic clinical decision theory, including decision trees. Active problem solving will be emphasized. Prerequisite: Biology 305.

451-6 (3,3) Biochemistry. (Same as Chemistry 451). (a) Chemistry and function of amino acids, proteins and enzymes; enzyme kinetics; chemistry, function and metabolism of carbohydrates; citric acid cycle; electron transport and oxidative phosphorylation. (b) Chemistry, function and metabolism of lipids; nitrogen metabolism; nucleic acid and protein biosynthesis; metabolic regulation. Three lectures per week. Must be taken in a,b sequence. Prerequisite: one year of organic chemistry.

453-3 Immunology Lecture. Principles of molecular and cellular immunology. Particular emphasis is given to molecular mechanisms involved in activation and maintenance of the immune response at the basic science level. The role of the immune system in medical diagnostic procedures and in human health is also discussed. Spring semester. Prerequisite: 403 or permission of instructor.

454-4 Soil Microbiology. (Same as Plant and Soil Science 454.) A study of microbial numbers, characteristics, and biochemical activities of soil microorganisms with emphasis on transformation of organic matter, minerals, and nitrogen in soil. Lab fee \$15.00. Prerequisite: 301 or Plant and Soil Science 240.

455-2 Medical Immunology. This course will be offered in Springfield only. A survey of the components of the immune system and how they interact with each other to produce responses that are important in the control or mediation of human disease. Two hours lecture. Prerequisite: 301 or equivalent.

460-3 Genetics of Bacteria and Viruses. Genetic mechanisms, mutation, transformation, recombination, transduction, lysogeny, phenotypic mixing and reactivation phenomena. Three hours lecture. Fall semester. Prerequisite: 301 and 302.

470-3 Prokaryotic Diversity Lecture. A consideration of the major groups of prokaryotes with special emphasis on their comparative physiology and biochemistry. Three hours lecture. Spring semester. Prerequisite: 301 or equivalent.

480-4 Molecular Biology of Microorganisms Laboratory. Genetic and biochemical analyses of microorganisms using a variety of techniques in molecular biology, molecular genetics and biotechnology. Six hours laboratory per week plus two hours of supervised unstructured laboratory work in most weeks. Fall semester. Prerequisite: 302 and one (or concurrent enrollment in one) of the following: 421, 425 or 460.

481-4 Diagnostic and Applied Microbiology Laboratory. Enrichment and isolation of medically relevant prokaryotes from natural samples, diagnostic methods for the identification of pathogenic bacteria and infection and the nature of the immune response. Six hours laboratory per week plus two hours unstructured, supervised laboratory work in most weeks. Spring semester. Prerequisite: 301 and 302 and two (or concurrent enrollment in two) of the following: 403, 453 or 470.

490-1 to 3 Undergraduate Research Participation. Investigation of a problem either individually or as part of a research group under the direction of a member of the faculty. Not for graduate credit. Prerequisite: 3.0 grade point average in microbiology and consent of instructor.

495-1 Senior Seminar. Readings, discussions, and presentations of current research topics on microbiology. Offered in spring semester. Prerequisite: senior standing in Microbiology.

Mining Engineering (MNGE)

Safety glasses, an electronic calculator, and textbooks are required of all mining engineering students.

270-3 Introduction to Mining Engineering. Introduction to Mining Engineering (Non-Mining majors only). Importance of mining in a country's economy; stages of mining: prospecting and exploration, development and exploitation; unit operations of mining, surface mining systems, underground mining methods, novel mining methods, mineral processing, marketing of minerals. Prerequisites: sophomore standing or consent of instructor.

320-3 Surveying for Engineers. Land Surveying. Tacheometry and correlation. Aerial Surveying. Production measurement. Analysis of survey data for engineering design. Geophysical and borehole surveying. Laboratory. Prerequisite: Mathematics 150, Engineering 102 or consent of instructor.

392-1 to 6 Mining Engineering Cooperative Education. Supervised work experience in industry, government or professional organizations. Students work with on-site supervisor and faculty adviser. Reports are required from the student and the employer. Hours do not count toward degree requirements. Mandatory Pass/Fail. Prerequisite: sophomore standing.

400-3 Principles of Mining Engineering. Introduction to role of mining in the economics of the minerals industry. Mine exploration and valuation. Mining methods and equipment. Explosives and blasting. Blast hole layout considerations. Exploration program design. Geophysical logging. Land acquisition and control. Public

relations and environmental quality. Field trips. Not for graduate credit. Prerequisite: Geology 220 or concurrent enrollment or consent of instructor.

401-1 Mining Environmental Impacts and Permits. Socio-economic impacts of mining industry. Analyzing the markets for coal and its products. Mining operations and related environmental impacts. Mining permits. Prerequisite: 400 or consent of instructor.

405-1 Field Trip. Visit several mining operations and prepare a report. Not for graduate credit. Prerequisite: 400 and Geology 390.

410-3 Underground Mining Systems Design. Study of coal property evaluation. Underground mining methods. Design of mine production and its ancillary systems and subsystems. Prerequisite: Civil Engineering 263 or Mining Engineering 320, 400, Mathematics 251, Engineering 361, Geology 390 or concurrent enrollment. Consent of instructor for graduate students and non-majors.

411-2 Mine Machinery. Analysis and design of underground and surface mining machinery. Equipment and parts selection. System development. Preventive maintenance. Prerequisite: 410.

413-3 Mine and Industrial Power Systems. Electrical circuits, transformers, motors and their industrial applications. Electrical power distribution; systems design and components selection. Pneumatic and hydraulic power principles. Prerequisite: Physics 205 and Mathematics 250.

415-4 Surface Mining, Quarrying and the Environment. Surface mining systems and quarrying methods for coal, aggregate, and hardrock minerals. Surface mining and quarrying economics. Product specifications and transportation. Equipment sizing and selection. Drainage control. Blasting design for control of fragmentation, air blast and vibration. Prerequisite: 400, Civil Engineering 263 or Mining Engineering 320, Mathematics 251 and Engineering 361. Consent of instructor for graduate students and non-majors.

417-3 Applied Probability and Statistics for Engineers. Probability and statistics concepts, analysis of engineering experimental data. Fitting experimental data to distribution functions. Regression analysis. Quality control in production systems. Reliability in engineering processes. Stochastic simulation of engineering systems. Prerequisite: Mathematics 251 or consent of instructor.

418-3 Mining of Ore Deposits. Analysis, planning and design of surface hardrock mines and underground mining systems. Analysis of mining and equipment costs. Prerequisite: 400, Civil Engineering 263 or Mining Engineering 320, and Geology 390.

420-3 Mineral and Coal Processing. Principles of processing minerals, aggregates, and coal, including unit operations of comminution, classification, solid-solid separation, dewatering, and tailings disposal. Laboratory investigations of the fundamental principles governing unit operations including size reduction, mineral liberation, classification, mineral recovery, and dewatering. Laboratory. Prerequisite: 400, Chemistry 210, Physics 205b, Mathematics 305, Engineering 313 or concurrent enrollment. Consent of the instructor for non-majors and graduate students.

421-3 Mineral Processing Plant Design. Engineering design of unit operations used for mineral, aggregate, coal processing, flowsheet design, simulation of processing plants, evaluation of plant performance, and process control. Laboratory investigations on the design of unit operations including size reduction, classification, gravity separation, flotation, and dewatering. Laboratory. Prerequisite: 417 or concurrent enrollment and 420. Consent of instructor for graduate students and non-majors.

425-3 Mine Ventilation Systems Analysis and Design. Study of the theories and practice of natural and forced mine ventilation. Fan and mine characteristics. Ventilation network analysis. Mine ventilation design and problem analysis. Laboratory. Prerequisite: 410, Engineering 300 and 313. Consent of instructor for graduate students and non-majors.

430-3 Economics of Mineral Resources. Economics of mineral resources. Investment decision making criteria; economic viability of mining projects, financing mining projects; sensitivity and risk analyses. Prerequisites: 400, Engineering 361, or consent of instructor.

431-3 Rock Mechanics: Principles and Design. Analysis of stress and strain, elementary elasticity, stress distribution around openings, engineering properties of rocks, artificial support and reinforcement, slope stability. Laboratory. Prerequisite: Engineering 311 and Mathematics 305.

435-3 Operations Research and Computers in Mine Design. Mine systems analysis, operations research and statistics in decision making, production engineering, mine planning, optimization, linear programming, computer simulation. Prerequisite: either 410 and 415 or 418 alone; Engineering 222 and 361.

440-3 Material Handling Systems. Analysis and design of material handling systems and subsystems. Material handling systems economics. Prerequisite: 410, 413, 415 and 417 or concurrent enrollment. Consent of instructor for graduate students and non-majors.

445-3 Mine Equipment Maintenance Programs. Mechanical, hydraulic, and electrical systems in mining equipment. Equipment maintenance problems in mines and minerals processing facilities. Cost of lost production. Cost centers and identification of high cost problem areas in mining operations. Principles, design, and development of maintenance systems. Maintenance organization, responsibility, and scheduling. Prerequisite: 410, 415, 417, Engineering 385 or concurrent enrollment. Consent of instructor for graduate students and non-majors.

455-3 Mine Environment, Health and Safety Engineering. Analysis of mine environmental impacts and their mitigation, safety problems and rules and regulations, hazards and accidents, sealing and recovery of mines, design of mine emergency plans, safety methods and health hazard control plans. Acid mine drainage, minerals waste disposal environmental remediation. Laboratory. Prerequisite: 410, 415, 417, or concurrent enrollment. Consent of instructor for graduate students and non-majors.

460-4 Computer-Aided Mine Systems Analysis and Design. Projects in planning and design of surface and underground mining systems. Evaluate and design mining subsystems; integrate subsystems and procedures into a preliminary mine design; and optimize operations from exploration to closure. Ethics and professional-

ism in engineering. Two lectures and two two-hour laboratories per week. Prerequisite: 420, 425, 431 or consent of instructor.

470-3 Experimental Methods in Rock Mechanics. Supplement theoretical knowledge gained in 431 with laboratory experiments. Physical property tests for specific gravity, moisture, density porosity of rocks. Unconfined and confined compressive strength, tensile strength, shear strength, photoelasticity, static and dynamic strain measurement systems, field instrumentation techniques. Laboratory. Prerequisite: 431.

475-3 Analysis and Design of Mine Excavations. Rock classification; design of shafts, slopes, tunnels, and underground chambers; support requirements; design of slopes; design of underground mining systems from ground control point of view; design of impoundments. Prerequisite: 410, 415 and 431. Consent of instructor for graduate students and non-majors.

480-3 Rock Fragmentation Systems. Principles of rock fragmentation. Drilling and mechanics of rock penetration, drillability indices. Chemistry of explosives. Design of blast patterns in surface and underground mines and quarries, prevention of airblast, vibration, and noise. Prerequisite: 415. Consent of instructor for graduate students and non-majors.

492-1 to 5 Special Problems in Mining Engineering. Topics and problems selected either by the instructor or the student with the approval of the instructor. Five hours maximum course credit. Not for graduate credit. Prerequisite: senior standing and consent of instructor.

Mortuary Science and Funeral Service (MSFS)

101-3 Orientation to Funeral Service. Students will trace the history of funeral services from ancient times through practices with emphasis on the development of funeral practices in the United States. Students study the customs of various cultures throughout the world including customs in the United States. They will demonstrate a knowledge of funeral service organizations and will discuss topical areas of current discussion. Lecture three hours. Prerequisite: consent of instructor.

108-3 Funeral Service Psychology. Designed to acquaint the student with an overview of psychology in funeral service as applied to death, grief and mourning. Students will examine interpersonal and public relations as they affect the funeral service practitioner in relationship with the public served. Lecture three hours. Prerequisite: 101 or Psychology 102.

225-8 (4,4) Embalming Theory and Practice. (a) The student will be introduced to techniques of embalming through a study of the body, sanitation, embalming agents, instruments, and methods of embalming. The student studies the theory, practices, and techniques of sanitation as well as restoration and preservation of deceased human remains. Laboratory experience will consist of embalming deceased remains and of other related activities. Lecture three hours. Laboratory two hours. (b) The student will study the anatomy of the circulatory system, the autopsied case, the cavity embalming, the contents of the thoracic and abdominal cavities and various embalming treatments. Laboratory experience is a continuation of 225a. Lecture three hours. Laboratory two hours. Must be taken in a,b sequence. Prerequisite: restricted to mortuary science and funeral service majors, 240, and proof of Hepatitis B vaccine or Titre test.

230-4 Mortuary Anatomy. The student will study the structure and function of the human body as a whole including: general organization, structural organization, tissues, skeletal system, nervous system, circulatory system, physiology of circulation, glands, respiratory system, digestive system, genitourinary system, integument and special senses. Lecture three hours. Prerequisite: restricted to major and Zoology 115/118.

240-3 Mortuary Regulations. The student will have knowledge of the federal, state and local regulations pertaining to the funeral profession. Studies will include the Occupational Safety and Health Administration regulations, Americans with Disabilities Act, Uniform Anatomical Gift Act, the Federal Trade Commission requirements, Rules and Regulations for the Control of Communicable Disease and other such regulations governing funeral service. Lecture three hours. Prerequisite: restricted to majors or consent of instructor.

245-4 Restorative Art. Students will build upon knowledge of the anatomical structures of the cranial and facial areas of the human skull gained through anatomy. Utilizing terms and knowledge of cranial and facial structures, the student will describe the facial proportions and markings. Students will develop a knowledge of anatomical modeling, facial expressions, familiarization with instruments, materials and techniques necessary to rebuild the human face that has been destroyed by traumatic and/or pathological conditions. Laboratory assignments will include modeling, hair restoration and others. Lecture three hours. Laboratory two hours. Prerequisite: 230.

255-3 Embalming Chemistry. The student will study the chemistry of the body, sanitation, toxicology, chemical changes in deceased human remains, disinfection, and embalming fluids. Laboratory experiences in 225a will complement lecture material. Lecture three hours. Prerequisite: Chemistry 106 and concurrent enrollment in 225a.

256-4 Introductory Microbiology. The student will survey microbiology: morphology, physiology, populations of microbial organisms, microbial destruction, immunology, and pathogenic agents. Lecture three hours. Prerequisite: restricted to major, Zoology 115, 118 and Chemistry 106.

257-3 Pathology. Students will be introduced to the study of the cause, course and effects of diseases upon the human body with stress on ways in which tissue changes affect the embalming process. Lecture three hours. Prerequisite: 230 and 256 or equivalent.

270-2 Computers in Funeral Service. The student will be given the opportunity to enhance their understanding of the applications of computers to the funeral profession. This course is designed to instill an appreciation for computer as an effective funeral home management tool. Lecture two hours. Prerequisite: restricted to major.

299-1 to 16 Individual Study. Provides students with opportunity to explore studies that fit a particular need or interest. Enrollment provides access to the resources of the facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the faculty sponsor, program representative and department chair.

302-4 Restorative Color and Cosmetics. The student will learn advanced procedure and techniques for restoration and cosmetology. Special attention will be placed upon pigments, visual aspects of color and color schemes, illumination, complexion types and materials, corrective shaping, wax and cosmetics and treatment of discoloration. Lecture three hours. Laboratory two hours. Prerequisite: 245.

340-3 Mortuary Law. Deals with the statutory laws and practices pertaining to funeral service. The student will trace the laws that govern the funeral director and the embalmer and their legal responsibilities to the consumer. Knowledge will be gained concerning the legal status of a dead human body, necessities of disposition, methods of disposition, rights and parties undertaking responsibility of disposition, custodial rights of the dead human remains, contract laws, right of disposition, control of the funeral, general rules of priority pertaining to next of kin, mental anguish, photographs, confidentiality, negligent acts by the funeral director and/or embalmer, mutilation laws, injury to invitees, injury to pallbearers, Clergy and staff, physical impact, collection against an estate, primary obligor, estate liability, cremation, authorization, commingling of remains, personal effects, storage and shipping of remains. Lecture three hours. Prerequisite: restricted to major.

350-1 to 32 Mortuary Science and Funeral Service Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. Mandatory Pass/Fail. Prerequisite: recommendation by program representative and approval by department chair.

351-4 Mortuary Management. The student will examine the principles and practices of funeral home operations and management. Materials will include items that are required to operate a successful funeral home: supervision, obtaining the finances to start or purchase a business, daily fiscal operations of that business, inventory and insurance. Lecture four hours. Prerequisite: 240 and Information Management Systems 120.

352-3 Mortuary Merchandising and Marketing. Included are the funeral directors responsibilities from the first call to the completion of the last service rendered the family. Topics include after-care, pre-need, record keeping, critical issues in funeral service, and both personal and professional ethics. Lecture three hours. Prerequisite: 351.

360-4 Advanced Embalming Procedures. The student will study the proper procedures of embalming and other necessary preparations of special cases. Studies will include techniques and procedures used for embalming unique cases such as floaters, burn victims, car accident victims and other traumatic faces of death. Students will be required to submit several written research papers and present oral presentations of specific topics throughout the semester. Lecture four hours. Prerequisite: 225b.

401-3 Funeral Service Counseling. The student will be taught specific counseling procedures used when counseling the bereaved family. Specific attention will be paid to the counseling and communication techniques and skills that will assist individual family members with handling grief and the mourning process. In addition, students will explore the promotion of pre-need and after-care services. Lecture three hours. Prerequisite: 108 or Psychology 102.

410-5 Funeral Service Internship-Management. Students will spend a semester long internship in a university approved funeral home learning in actual situations the operational procedures and policies of the establishment. The student will perform duties and services, as assigned by the preceptor and the faculty of mortuary science and funeral service program. The student will observe and participate in the execution of the total services rendered to the family by the funeral director. Management reports and assignments are required to be completed by the student. Prerequisite: all other requirement of the mortuary science and funeral service major must be including a grade point average of at least 2.0 in the major. Must be taken concurrently with 411.

411-5 Funeral Service Internship-Embalming. Students will spend a semester long internship in a university approved funeral home learning in actual situations the operational procedures and policies of the establishment. The student will perform duties and services, as assigned by the preceptor and the faculty of mortuary science and funeral service program. The student will observe and participate in the execution of the total services rendered to the family by the funeral director/embalmer. The student will be given the opportunity to learn embalming techniques by active participation in the preparation room. Embalming reports and assignments are required to be completed by the student. Prerequisite: all other requirements of the mortuary science and funeral service major must be met including a grade point average of at least 2.0 in the major, must be taken concurrently with 410.

412-2 Funeral Service Seminar. Formal discussions are held to evaluate the experiences and progress of the participants in the internship program. The second part of the seminar is a review for the National Board Examination. Mandatory Pass/Fail. Prerequisite: concurrent enrollment in 410 and 411.

415-3 On Dying and Death. Students will study the processes of death, grief, and bereavement. Emphasis on the practical aspects of coping with the many problems concerning death. Not for graduate credit.

Music (MUS)

011-1 to 8 (1 or 2, 1 or 2, 1 or 2) Marching Salukis. Fall semester only. Open to all students with experience in bands. Performs at all home football games, and one or two away. Counts as a major ensemble, one of which must be taken each semester by resident music majors.

012-1 to 4 (1,1,1,1) Pep Band. A select group which performs at all home basketball games. Prerequisite: audition prior to first registration.

013-1 to 16 (1 or 2 per semester) Symphonic Band. Open to all students with experience in bands. Performs standard literature. Two or three concerts per year. Counts as major ensemble, one of which must be taken each semester by resident music majors.

014-1 to 16 (1 or 2 per semester) Concert Wind Ensemble. A select group which performs advanced contemporary literature. Three concerts and tour per year. Counts as a major ensemble, one of which must be taken each semester by resident music majors. Prerequisite: audition prior to first registration.

015-1 to 16 (1 or 2 per semester) Jazz Ensemble. For students experienced with popular literature. Concerts and tours when feasible. Prerequisite: audition prior to first registration.

016-1 to 8 (1,1,1,1,1,1,1,1) Jazz Combos. A select group, performing literature scored for this instrumentation. Two or three concerts per year and tour as feasible. Prerequisite: audition prior to first registration.

017-1 to 16 (1 or 2 per semester) Symphony. Open to all experienced string, woodwind, brass, and percussion players. Plays standard and advanced orchestral literature, performs three or four concerts per year. Counts as a major ensemble, one of which must be taken each semester by resident music majors. Prerequisite: audition prior to first registration.

020-1 to 8 (1,1,1,1,1,1,1,1) Choral Union. Open to qualified students who desire to perform major choral-orchestral literature. Two concerts per year. Counts as a major ensemble, one of which must be taken each semester by resident music majors. Audition required.

021-1 to 16 (1 or 2 per semester) Chamber Choir. Open to all experienced singers. Emphasis on advanced contemporary literature. Three or four concerts per year and tours as feasible. Audition required.

022-1 to 16 (1 or 2 per semester) Concert Choir. A select group which performs advanced choral literature of all eras. Three or four concerts per year and tours as feasible. Counts as a major ensemble, one of which must be taken each semester by resident music majors. Prerequisite: audition prior to first registration, and each succeeding fall.

023-1 to 8 (1,1,1,1,1,1,1,1) Vocal Jazz Ensemble. Open to all experienced singers. Emphasis on light, popular literature. Two or three appearances per year.

030-4 (1,1,1,1) Piano Class. (a) Level 1, (b) level 2, (c) level 3, (d) level 4. Designed to develop functional command of basic keyboard skills needed in the further study of music and the teaching of music. Take in sequence unless assigned advanced placement by instructor. Prerequisite: major or minor in music, elementary education, early childhood education, or consent of instructor.

031a-1 Voice Class. Designed to develop functional command of basic vocal skills needed in teaching music. Prerequisite: consent of instructor.

032-2 (1,1) String Techniques Class. (a) Upper strings; (b) lower strings. Designed to develop essential techniques and principles which can be used in teaching young string pupils. Prerequisite: music major or minor.

033-4 (1,1,1,1) Woodwind Techniques Class. Flute, clarinet, oboe, bassoon. Designed to develop essential techniques and principles which can be used in teaching young woodwind pupils. Students may begin on one instrument and shift to another at midterm, or they may continue with the same instrument with the consent of the instructor. Prerequisite: music major or minor or consent of instructor.

034-2 (1,1) Brass Techniques Class. Trumpet, french horn, trombone, tuba. Designed to develop essential techniques and principles which can be employed in teaching beginning brass pupils. Students may begin with one instrument and shift to another at midterm or they may continue with the same instrument with the consent of the instructor. Prerequisite: music major or minor.

035-1 Percussion Techniques Class. Designed to develop basic techniques and principles which can be employed in teaching young percussion pupils. Prerequisite: music major or minor.

036-2 (1,1) Guitar Class. (a) Level 1, (b) level 2. Designed to develop basic techniques and principles which can be employed in teaching music. Prerequisite: major or minor in music, elementary education, or early childhood education, or consent of instructor.

040, 140, 240, 340, 440, 540-1, 2, or 4 Applied Music. Offered at six levels in the areas listed below. May be repeated for credit as long as passing grade is maintained. Students must attend the weekly studio class and be concurrently enrolled in one of the performing groups. Prerequisite for 040: satisfactory completion of beginning class instruction offered in that area, or the equivalent. Prerequisite for 140: three or more years of prior study or performing experience, or two semesters of C or better at 040 level. Prerequisite for 240, 340: two semesters of C or better at previous level, or consent of applied jury. Prerequisite for 440, 540: two semesters of B or better at previous level, or consent of applied jury. Music majors and minors enroll for two credits on their principal instrument, taking one half-hour private lesson and studio class, Tuesdays at 10:00. Those with prior approval by their applied jury for the specialization in performance enroll for four credits, taking two half-hour private lessons and the student class each week. Non-music majors or minors, and those music majors taking a second instrument, enroll for one credit, taking one private or class lesson per week. Six hours of individual practice per week required for each lesson. For shorter sessions, credit is reduced or lesson time is increased proportionately.

a. Flute	f. Horn	k. Percussion	p. Voice	u. Recorder
b. Oboe	g. Trumpet	l. Violin	q. Piano	v. Coaching
c. Clarinet	h. Trombone	m. Viola	r. Organ	
d. Bassoon	i. Baritone	n. Cello	s. Harpsichord	
e. Saxophone	j. Tuba	o. String bass	t. Guitar	

101-3 Music Fundamentals. Rudiments of music for those with little or no musical background. One lecture and one piano laboratory session per week. Provides basic music vocabulary and keyboard competency for Curriculum and Instruction 325, 326.

102-2 Survey of Music Literature. Characteristic forms and styles. Analysis and listening. Examples from the leading composers of each era. Prerequisite: music major or minor.

103-3 Music Understanding. (University Core Curriculum) A study of the historical development of Western Music and the listening skills necessary to perceive the expressive aspects of each style.

104-2 (1,1) Aural Skills. A laboratory course designed to complement 105a and b. Practice in recognition and singing of basic pitch and rhythm materials, and their realization in standard musical notation. For those planning a major or minor in music, take a and b in sequence, or, with prior consent of instructor, concurrently.

105-6 (3,3) Basic Harmony. Study of traditional diatonic tonal materials and standard notational practice. Includes keyboard skills. For those with performing experience and planning a major or minor in music. Take a and b in sequence. Prerequisite: concurrent registration in 104 or equivalent aural skill.

107-1 Applied Harmony for Fretted Instruments. Application of basic harmonic functions to the fretted instruments including guitar. Prerequisite: concurrent enrollment in 140 or 540 or consent of instructor.

110-4 (2,2) Introduction to Piano Pedagogy. Introduction to a broad range of studies that influence the development of effective piano teaching. Seminar discussions, lectures, observation of piano teaching, piano studies, readings, listening projects and written essays deal with the history of piano pedagogy and performance, studies of teaching and learning concepts of music education and educational psychology, piano literature, keyboard musicianship and practical aspects of teaching.

140-1, 2, or 4 Applied Music. (See 040.)

174-3 Commercial Music. Introductory course for students interested in the commercial aspects of the music industry. Lectures given by outstanding executives and performers in the various segments of the industry such as management, cash show, contracts, the recording of music and video, and publishing. Students go to Nashville, Tennessee, where various activities take place, including tours of recording studios, publishing houses, performance rights societies, and video and television studios. Designed to clarify the qualifications the student must have, or develop, in order to be successful in the commercial music world. Prerequisite: major in music.

203-3 Diversity and Popular Music in American Culture. (University Core Curriculum) A study of the development of American popular music, particularly in relation to the different cultural groups which spawned it.

204-1 Advanced Aural Skills. Continuation of 104. Designed to complement 205. Prerequisite: 104b with a grade of C or better.

205-3 Advanced Harmony. Study of chromatic tonal materials, including keyboard skills. Prerequisite: 104b and 105b with a grade of C or better, and concurrent registration in 204.

206-3 Music as A Creative Experience. Students experiment with various ways of creative musical sound structures, and engage in active, critical listening, as a means to a better understanding of the nature of musical experience. Not historically oriented.

207-2 Contrapuntal Techniques. Basic contrapuntal principles and skills, especially as applied to 18th and 19th century styles. Extensive writing practice, and analysis of stylistic models. Introduction to major contrapuntal forms. Prerequisite: 204 and 205 with a grade of C or better, or take 204 concurrently.

210-2 Analytic Techniques for the Pianist. Studies the process by which piano teachers analyze piano music and performance. Extensive projects in piano music analysis, sightreading, interpreting and memorizing piano compositions, lecture/discussions, reading and listening assignments and observation of studio and piano class teaching provide increasing readiness for piano teaching as it relies on analytic and problem-solving techniques.

211-2 Piano Literature Seminar. A survey course that acquaints students with piano music for teaching at all levels of advancement from baroque, classical, romantic and contemporary music style periods. Piano literature, sightreading, recorded music listening assignments, score study, writing assignments and lecture/performance presentations in class include studies of piano methods, piano music editions, collections and publishers highlighting the keyboard literature of sixteen major composers.

240-1, 2, or 4 Applied Music. (See 040.)

250-3 The History and Literature of the Guitar and Related Fretted Instruments. A survey of the history and literature of the guitar and related fretted instruments from the Renaissance to the present with emphasis on interpretation.

257-1 to 12 Intern-Work Experience. Practical experience in music retailing, wholesaling, and publishing under the supervision of professional firms. Open only to candidates for the Bachelor of Arts degree with emphasis in music business.

280-2 to 4 (2,2) Beginning Composition. Application of contemporary compositional techniques. Prerequisite: 105b or consent of instructor.

304-2 The General Music Program. Survey of problems and methods in teaching music in the schools, with scheduled observations of school music programs in operation. Special attention given to the teaching of comprehensive musicianship through the general music program in the junior and senior high school. Also includes undergraduate history and philosophy of music education. Prerequisite: admission to the Teacher Education Program.

305-2 Instrumental Music in the Schools. Administration of the school instrumental music program. Emphasis upon teaching instruments and the management and instruction of instrumental organizations.

306-2 Music Specialist in the Elementary Schools. Principles and methods employed in supervising and teaching the elementary school music program. Designed for music majors and minors. Prerequisite: 304.

307-2 Computers and Music. An introduction to essential computer tools for musicians. Topics covered will include music notation software, searching the internet for musical resources, and midi keyboard basics. Prerequisite 102, 104b, 105b.

310-2 Piano Technique Seminar. An exhaustive study of three classics on the subject of piano technique by authors Reginald Gerig, Paul Roes and Abby Whiteside. This historical perspective is practically applied in a weekly routine of technical and theoretical studies at the piano. The course provides a foundation from which to deal with all aspects of piano technique development in teaching.

311-2 Advanced Piano Literature Seminar. In-depth study of an extensive catalogue of piano works for specific selection and design of a sequential curriculum of piano literature for teaching. Piano literature sightreading, recorded music listening assignments and score study culminate in a final course project that details specific piano works for teaching baroque, classical, romantic and contemporary literature to students of elementary, intermediate and advanced abilities. Prerequisite: 211.

316-1 Introduction to Conducting. An introductory conducting course designed to teaching beginning rehearsal techniques. Prerequisite: music major or minor and junior standing.

317-2 Choral Conducting and Methods. Score reading, baton techniques, and rehearsal techniques, organization and management problems of school choral groups. Prerequisite: music major or minor and junior standing.

318-2 Instrumental Conducting. Score reading, baton techniques, and rehearsal management. Supervised application in ensemble. Prerequisite: music major or minor and junior standing.

321-2 Form and Analysis. Comprehensive study of harmonic and formal structures and typical stylistic traits of 18th and 19th century music. Prerequisite: 204 and 207.

322-3 Principles of 20th Century Music. Comprehensive study of harmonic techniques and other stylistic traits of major 20th century idioms. Prerequisite: 321.

324-1 Instrumental Arranging. Practice in scoring of transcriptions, arrangements, and original compositions for standard instrumental groups. Prerequisite: 205.

325-1 Choral Arranging. Practice in scoring arrangements and/or original compositions for choral groups. Prerequisite: 205.

331-1 Jazz Improvisation. Ear training, phrasing in extemporaneous playing, use of chord symbols and chord progressions, special effects peculiar to jazz playing and styles of playing. Prerequisite: consent of instructor.

340-1, 2 or 4 Applied Music. (See 040.)

341-1 to 8 (1 or 2 per semester) Accompanying Laboratory. Experience, under supervision, in accompanying soloists and groups. Counts as a major ensemble for junior and senior music majors specializing in keyboard performance and piano pedagogy only.

357-6 (3,3) Music History. Study of musical examples and techniques evolving from the ancient period to the present. May take a or b in either order. Prerequisite: 102 with a grade of C or better and junior standing. Satisfies the College of Liberal Arts Writing Across-the-Curriculum requirement for music majors.

363-2 (1,1) Pronunciation and Diction for Singers. (a) English and French, (b) German and Italian. Establishment of proper pronunciation as applied to vocal literature. Prerequisite: one or more semesters of private or class voice instruction.

364-2 The Alexander Technique of Body Control. A controlled discipline to counteract tension habits that are harmful to correct use of the body, particularly as they relate to music, speech, dance, and theater.

365-1 to 64 (1,1,1,1,1,1,1 per section) Chamber Music. Groups of two to sixteen performers as organized and sponsored by individual faculty members. Includes duo-piano teams, and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible. Section (g) counts as a major ensemble for music majors specializing in guitar and for juniors and seniors with non-performance specializations whose principal instrument is the guitar: (a) Chamber music-vocal; (b) Chamber music-string; (c) Chamber music-woodwind; (d) Chamber music-brass; (e) Chamber music-percussion; (f) Chamber music-keyboard; (g) Chamber music-classical guitar; (h) Chamber music-20th century. Instrumentalists and singers experiment with new musical techniques and styles. Small ensembles and/or one large ensemble will rehearse weekly.

371-2 Evolution of Jazz. Stylistic characteristics of jazz at various stages of its evolution. Societies and cultures from which it derived. Orientation is historical, sociological, and stylistic.

373-3 Rock and Pop Music. Study of rock and other popular American music. Evolution of both black and white folk music is shown. Rock is studied as the merging of aspects of these two folk mainstreams. Major figures in rock are studied. Lectures, live and recorded demonstrations, films, and individual projects will be used.

375-3 Introduction to Recording Engineering. Specializes in recording and engineering. Intended to be a general introduction to the world of multi-track recording. Seventy percent of the course involved with basic information about sound, test equipment, microphones, recorders, signal processing equipment, consoles, noise reduction devices, and the most recent developments in the perception of sound. Thirty percent consists of actual live recording sessions and mix-down sessions. Each student given hands-on experience in recording and mixing and will receive a copy of the master tape. Enrollment limited. Preference given to music majors. Prerequisite: junior music major.

376-3 Advanced Recording Engineering. Continues the skills developed in 375. Student familiarized with duties of the professional engineer through practical experience.

380-2 to 4 (2,2) Composition. Original composition in a contemporary language, intermediate in scope and form. Individual instruction and weekly seminar. Prerequisite: 280 or consent of instructor.

398-1 to 2 (1,1) Partial Recital. Preparation and presentation of a partial recital in any applied field. Prerequisite: prior or concurrent registration in 340 and approval of applied jury.

400-1 to 2 (1,1) Performance Techniques. Individual instruction in any secondary applied field. Designed to provide added depth of preparation for teaching instrumental and vocal music. Prerequisite: completion of 340 level or the equivalent in some field of applied music.

401-1 to 12 (1 to 2 per semester) Opera Workshop. Open to all appropriately experienced singers, actors, dancers, instrumentalists and theater technicians. Study of opera/opera repertoire and performance techniques. Prerequisite: consent of the instructor.

402-1 to 12 (1 to 2 per semester) Musical Theater Workshop. Open to all appropriately experienced actors, singers, dancers, instrumentalists and theater technicians. Study of musical theater/musical revue repertoire and performance techniques. Prerequisite: consent of the instructor.

407-2 Modal Counterpoint. Study of Renaissance contrapuntal techniques. Extensive writing practice, and analysis of stylistic models. Prerequisite: 207.

410-2 Piano Pedagogy Practicum. Provides undergraduate and graduate piano pedagogy majors with the opportunity for supervised practice piano teaching. Course activities include lesson-planning, conducting and evaluating studio piano and class piano lessons, and a survey of important educational issues that impact on effective piano teaching. Prerequisite: consent of instructor.

414-1 to 8 (1 to 2 per semester) Collegium Musicum. For experienced singers and instrumentalists. Emphasis upon practical study of historical music literature of the Medieval, Renaissance, and Baroque eras.

420-1 to 2 (1,1) Instrument Repair. A shop-laboratory course dealing with the selection, tuning, adjustment, maintenance, and repair of musical instruments. Prerequisite: two semesters of instrumental techniques courses or consent of instructor.

421-2 Advanced Analysis. Structure, form, and design in music as the coherent organization of all of its factors. Analysis of works chosen from a variety of styles and genres. Prerequisite: 321.

440-1, 2, or 4 Applied Music. (See 040.)

447-4 (2,2) Electronic Music. (a) Introduction to classical studio equipment and techniques; use of voltage controlled equipment. Individual laboratory experience available. (b) Emphasis upon creative projects, more sophisticated sound experimentation, and analysis. Enrollment limited. Must be taken in a,b sequence. Prerequisite: 280 or consent of instructor.

453-2 to 4 (2 per semester) Advanced Topics in Choral Music. Practicum in the selection, rehearsal, and performance of appropriate literature. Study of techniques for achieving proficient performance and musical growth. For experienced teachers and advanced students.

454-2 to 4 (2 per semester) Advanced Topics in Instrumental Music. Practicum in the selection, rehearsal, and performance of appropriate literature. Study of techniques for achieving proficient performance and musical growth. Designed for experienced teachers and advanced students.

455-2 to 4 (2 per semester) Advanced Topics in Elementary School Music. Practicum in the selection and use of materials for the elementary school program. Study of techniques for achieving balanced musical growth. For experienced teachers and advanced students.

456-4 (2,2) Music for Exceptional Children. (a) Theories and techniques for therapeutic and recreational use of music with physically and mentally handicapped children. Includes keyboard, autoharp, guitar, and tuned and untuned classroom instruments. (b) Applications for the gifted, emotionally disturbed, and culturally disadvantaged child. Take in sequence. Prerequisite: 302 or prior consent of instructor.

461-3 Applied Music Pedagogy. Specialized problems and techniques employed in studio teaching of any particular field of music performance. Study of music literature appropriate for the various levels of performance. Opportunity, as feasible, for supervised instruction of pupils. Meets with appropriate instructor, individually or in groups.

468-2 to 4 (2,2) Music Productions. Practicum in the techniques for staging operas and musicals.

470-3 History of Opera. The development of the music, libretti and staging of opera from the late Renaissance to the present. Prerequisite: 357b, or consent of instructor.

472-2 Chamber Music Literature. A study of literature for the principal types of chamber music groups.

475-3 Baroque Music. The development of vocal and instrumental music in the period 1600-1750, from Monteverdi to Bach and Handel. Oratorio and Cantata, the influence of opera, sonata, suite, and concerto. Prerequisite: 357a with a grade of C or better, or graduate standing.

476-3 Classical Music. Development of the sonata, symphony, concerto, and chamber music in the 18th and early 19th centuries, with emphasis on the music of Haydn, Mozart, and Beethoven. Prerequisite: 357b with a grade of C or better, or graduate standing.

477-3 Romantic Music. Development of the symphony and sonata forms, chamber music, and vocal music in the 19th and early 20th centuries. Rise of nationalism and impressionism. Prerequisite: 357b with a grade of C or better, or graduate standing.

479-2 to 4 (2 per topic) Solo Performance Literature. Topics presented will depend upon the needs of students and upon instructors scheduled. (a) Piano literature, including an introductory study of harpsichord music; (b) organ literature, in relation to the history of the instrument; (c) song literature; (d) guitar and lute literature; (e) solo string literature; (f) solo wind literature.

480-2 to 4 (2, 2) Advanced Composition. Original composition involving the larger media. Individual instruction. Prerequisite: two semesters of 380 with a grade of C or better and approval of composition jury.

481-1 to 4 Readings in Music Theory. Assigned readings and reporting of materials pertaining to a particular phase of music theory in historical perspective. Approximately three hours' preparation per week per credit (adjusted for shorter sessions). Prerequisite: 321 and 322 or prior consent of instructor.

482-1 to 4 Readings in Music History and Literature. Assigned readings and reporting of materials pertaining to a particular phase of history or literature. Approximately three hours preparation per week per credit. Prerequisite: 357a and b, or prior consent of instructor.

483-1 to 4 Readings in Music Education. Assigned readings and reporting of materials pertaining to a particular phase of music education. Approximately three hours preparation per week per credit (adjusted for shorter sessions). Prerequisite: consent of instructor.

498-2 to 4 (2,2) Recital. Preparation and presentation of a full solo recital in any applied field. Prerequisite: prior or concurrent registration in 440 and approval of applied jury.

499-1 to 8 Independent Study. Original investigation of selected problems in music and music education with faculty guidance. Project planned to occupy approximately three hours preparation per week per credit (adjusted for shorter sessions). Not more than three hours toward 30 required for graduate degree. Prerequisite: prior consent of selected instructor.

Office Systems and Specialties (OSS)

100-2 Typewriting. Upon successful completion of this course, the student will demonstrate proficiency in keyboarding using correct touch-typing techniques, be able to type 20-30- plus words per minute for two minutes with five errors or less on straight-copy material, make all machine adjustments needed to set margins, tab and line spacing and center typed material both horizontally and vertically. Speed and accuracy development are emphasized. Lecture three hours and additional lab hours required. Intended for non-majors.

101-3 Business Correspondence. Principles and practice in written and oral communication. Includes development of ability to use words; application of correct grammatical construction in oral and written communications; analysis, planning, and practice of composing different types of internal and external communications in various administrative and business contexts; refinement of listing skills; mechanics and basic procedures for dictation; and ability to conduct a business meeting. Course will help form good habits that will facilitate adaptability in the world of work. Lecture and individualized instruction three hours.

107-2 Filing and Records Systems. Upon successful completion of this course, the student will apply filing rules to alphabetic, subject, numeric, and geographic methods; determine supplies for various filing systems; demonstrate an understanding of proper filing techniques; and demonstrate an understanding of concepts related to electronic filing and micrographics and the concepts necessary for the establishment, maintenance, and revision of a filing system. Lecture two hours and additional Learning Center hours required. Enrollment restricted to Office Systems and Specialties and Workforce Education and Development majors or consent of department.

109-3 Calculating Numerical Information. Upon successful completion of this course, the student will be able to calculate numerical information with and without the use of machines such as the electronic calculators; will have a basic understanding of calculating on the microcomputer; and will be able to perform necessary operations required to work with decimals, fractions, percentages, basic statistics, metrics, and graphic displays of numerical information as these tasks relate to routine office situations. Lecture two hours and additional Learning Center hours required.

111-3 Beginning Keyboarding. Upon successful completion of this course, the student will be able to correctly format and type business letters, memos and reports. Keyboarding speed and accuracy are emphasized. Lecture three hours and additional lab hours required.

112-3 Intermediate Keyboarding. Upon successful completion of this course, the student will be able to correctly format and type various communication documents and forms. Keyboarding speed and accuracy are emphasized. Lecture three hours and additional lab hours required. Prerequisite: 111 with a grade of C or better.

113-3 Advanced Keyboarding. Upon successful completion of this course, the student will be able to correctly format and type various advanced communication documents and forms. Keyboarding speed and accuracy are emphasized. Lecture three hours and additional lab hours required. Prerequisite: 112 with a grade of C or better.

114-3 Office Software Applications. Upon successful completion of this course, the student will be able to identify concepts and terminology used with various office application software programs such as data bases, spreadsheets, graphics, and computer-aided transcription. The student will be able to create, format, edit, store, retrieve, and print different types of documents as well as apply advanced features of the software to expand basic documents. Lecture three hours and additional lab hours required. Prerequisite: 111 or equivalent.

118-3 Introduction to Machine Transcription. Upon successful completion of this course, the student will be able to operate properly various transcribing units and to produce a variety of business communications in mailable format. The student will review language skills including grammar, punctuation, capitalization and number usage, word division, spelling, and vocabulary. Lecture three hours and additional Learning Center hours required. Prerequisite: 111 or equivalent.

131-3 Beginning Shorthand. Upon successful completion of this course, the student will demonstrate proficiency in Superwrite theory by reading and writing outlines accurately and rapidly, by taking practice dictation on familiar and related materials, and by transcribing material using proper format for mailable copy. Lecture three hours. Prerequisite: 111 or concurrent enrollment.

132-4 Intermediate Shorthand. Upon successful completion of this course, the student will demonstrate shorthand skill by taking dictation at faster speeds and by transcribing dictated material accurately and rapidly with emphasis on mailability and office style material. Any shorthand system may be used. Lecture three hours. Additional lab hours required. Prerequisite: 131 or equivalent.

140-3 Word Processing Concepts. Upon successful completion of this course, the student will be able to identify the parts of a word/information processing system, types of software, hardware components, electronic methods of storage, and electronic distribution and communication devices. The student will be able to discuss current office technological trends, the creation of an effective workplace, and careers available to information processing professionals. Prerequisite: 111 or equivalent or concurrent enrollment.

180-1 Introduction to Court Reporting. Upon successful completion of this course, the student will understand the classifications of court reporters and their duties; be aware of job availability and career opportunities; understand the court reporters' code of ethics; understand the role of the reporter in the courtroom; be aware of technological innovations; and be familiar with local, state and national professional associations. Prerequisite: 111 or equivalent.

182-3 Legal Terminology and Documents. Upon successful completion of this course, the student will be able to recognize, define, spell, pronounce and use legal terminology, including Latin words and phrases. An overview of several fields of law will enable the student to understand terminology commonly associated with the law.

186-4 Machine Shorthand I. Upon successful completion of this course, the student will be able to utilize conflict-free machine shorthand theory; write shorthand abbreviations, derivatives, and punctuation symbols; read printed shorthand text notes and student shorthand notes; take dictation of material for five minutes at 60-80 wpm; and transcribe with a minimum of 95 percent accuracy. Lecture five hours; laboratory five hours. Prerequisite: 111 or equivalent.

187-4 Machine Shorthand II. Upon successful completion of this course, the student will be able to write conflict-free machine shorthand briefs, phrases, and punctuation symbols; read conflict-free machine shorthand notes; take dictation of literary, jury charge and two-voice testimony at 100-120 wpm for five minutes and transcribe with a minimum of 95 percent accuracy. Lecture five hours; laboratory five hours. Prerequisite: 186, speed requirement of 186 must be met.

188-3 Court Transcript Preparation. Upon successful completion of this course, the student will be able to prepare court transcripts using the appropriate principles of punctuation, capitalization, numbers and abbreviations. The students will also apply knowledge of transcript components and methods of transcript preparation using current technology. Lecture three hours and additional laboratory hours required. Prerequisite: 111 or equivalent and 186.

199-1 to 10 Individual Study. Provides first-year students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor and chair.

205-3 Office Management and Supervision. Upon successful completion of this course students will demonstrate competency in the planning, organizing, implementing, evaluating and control of business office functions. Topics covered include: proper managerial skills; managerial roles; office services; physical facilities; employee training techniques; performance appraisal methods; office costs and productivity; methods for planning, scheduling and controlling work flows; feasibility studies; and vendor relations and equipment decisions. Prerequisite: 112 or equivalent.

206-1 to 6 Career Enhancement. This course is designed as a professional development activity to enhance the skills of persons seeking to improve their overall office efficiency and work environment and also to provide additional training for those seeking to enter the field. Topics include, but are not limited to, proofreading, word usage, punctuation, grammar, shorthand, dictation/transcription, typing format, math, spelling, and vocabulary.

208-3 Applied Law for Applied Sciences and Arts I. Upon successful completion of this course, the student will be familiar with fundamental legal practices and procedures. The student will be able to identify, define, and describe private and public agencies for the enforcement of legal rights, contracts, agency, and employment. Additional topics are selected to meet the needs of specific technical programs and offered in a restricted section.

209-3 Applied Law for Applied Sciences and Arts II. Upon successful completion of this course, the student will be more familiar with fundamental legal practices and procedures common to the various technical specializations. The student will be able to identify, define, and describe government regulations, administrative agencies, consumer protection regulations, environmental planning, security devices and insurance, partnerships, corporations, real property and environment, personal property and bailments, and commercial paper.

220-3 Legal Document Production. Upon successful completion of this course, the student will be able to produce a variety of legal documents and papers. Emphasis will be on use of modern word processing equipment and procedures. Lecture three hours and additional lab hours required. Recommended: working knowledge of a word processing package. Prerequisite: ability to type and use word processing on a computer.

221-3 Legal Terminology/Dictation and Transcription. Upon successful completion of this course, the student will take dictation of legal materials at speeds of 100-120 words a minute at 95 percent accuracy, using specialized shorthand shortcuts related to the legal field. The student will transcribe from notes with emphasis on mailability and be able to handle office-style situations effectively. Lecture three hours and additional Learning Center hours required. Prerequisite: 132 or equivalent, 113 or equivalent or concurrent enrollment, and 182.

223-3 Legal Administrative Support Procedures. Upon successful completion of this course, the student will have a basic understanding of career opportunities available in the legal support field and be able to perform necessary duties required of information support personnel in a law office or other law related organization. Prerequisites: 112 or equivalent, and 221 or concurrent enrollment.

230-4 Administrative Document Production. Upon successful completion of this course, the student will produce various communications using electronic keyboards, dictation/transcription equipment, and various modern procedures with speed and accuracy. Lecture two hours and additional Learning Center hours required. Prerequisite: 114 and 118.

232-3 Administrative Shorthand. Upon successful completion of this course, the student will be able to take administrative dictation at a speed of 90-110 words a minute at 95 percent accuracy, transcribe general and

specialty office communications with emphasis on mailability, and build transcription decision-making skills related to executive correspondence. Prerequisite: 112 and 132; English 102 also recommended.

233-3 Administrative Support Procedures. Upon successful completion of this course, the student will be able to perform efficiently administrative support tasks including handling mail and telephone situations, composing communications, editing and proofreading documents, using reprographics and micrographics, arranging for travel and conferences, performing basic information processing operations and carrying out supervisory responsibilities. Emphasis will be on human relations, time management, and organization and planning of work. Prerequisite: 112 or equivalent.

240-3 Desktop Publishing Applications. Upon successful completion of this course, the student will be able to define terms relating to the hardware and software components of information processing systems and terms relating to page assembly, topography and other desktop publishing elements. The student will be able to describe basic desktop publishing design principles and apply them to the creation and production of documents including newsletters, flyers and brochures. Lecture three hours and additional lab hours required. Prerequisite: 112 or equivalent.

241-3 Advanced Office Software Applications. Upon successful completion of this course, the student will be able to produce a variety of documents and formal presentations on computers using advanced information processing functions such as word processing, databases, spreadsheets, graphics and electronic mail. The student will also develop an understanding of information technology trends in regard to hardware and software as they relate to the production of complex documents. Lecture three hours and additional lab hours required. Prerequisite: 114 or equivalent.

242-3 Office Telecommunications. Upon successful completion of this course, the student will understand the importance of contemporary office telecommunications and why their importance is growing; review applications and basic technical detail; and be able to define necessary terms and concepts related to telecommunications and the telecommunication's environment involved in both voice and data communications. Prerequisite: 140.

243-3 Insurance Office Procedures. Upon successful completion of this course, the student will perform office duties particular to an insurance office as well as procedures used in all types of offices. Lecture three hours.

244-1 Machine Transcription (Insurance). Upon successful completion of this course, the student will be able to transcribe from a transcribing unit most types of insurance office communications at a rate of speed approaching the student's straight copy speed. Students will be required to make decisions in a variety of instances. Lecture one hour and additional Learning Center hours required.

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260-3 Introduction to Text Processing. Each student will learn the basic operation and function of representative word processing machines and terminals. The lab time will be spent in the development of speed and accuracy in the typing of textual materials. Lecture two hours and additional Learning Center hours required. Prerequisite: typing skill.

261-3 Medical Terminology, Dictation, and Transcription I. Upon successful completion of this course, the student will have a basic understanding and an ability to use appropriate medical terminology, including prefixes, suffixes, and root words. The student will be able to spell and define medical terms and other special terminology in producing basic medical communications/documents. Lecture three hours and additional Learning Center hours required. Prerequisite: 111 or equivalent.

262-3 Medical Terminology, Dictation, and Transcription II. Upon successful completion of this course, the student will be able to utilize appropriate medical terminology, including special terms and abbreviations in the production of complex communications/documents. The student will be able to transcribe medical-related material from shorthand notes or recorded dictation with increased speed and accuracy. Lecture three hours and additional Learning Center hours required. Prerequisite: 111 or equivalent.

263-3 Medical Administrative Support Procedures. Upon successful completion of this course, the student will have a basic understanding of career opportunities available in the medical support field and be able to perform necessary duties required of information support personnel in a hospital, clinic, doctor's office, or other health-related organization. Lecture three hours and additional Learning Center hours required. Prerequisite: 111 or equivalent.

264-3 Health Insurance Processing. Upon successful completion of this course, the student will be able to prepare and to process various common health insurance forms by abstracting information from patient records. The student will have an understanding of common insurance, medical and diagnostic terminology, and coding principles relative to ICD-9-CM. Lecture three hours and additional Learning Center hours required. Prerequisite: 111 and 261.

281-3 Legal Testimony I. Upon successful completion of this course, the student will be able to write testimony materials on the shorthand machine using conflict-free theory. The student will be able to take dictation for five minutes at 140-160 wpm and transcribe with a minimum of 95 percent accuracy. Lecture five hours. Prerequisite: 187, speed requirements of 187 must be met.

282-3 Literary/Legal I. Upon successful completion of this course, the student will be able to take literary and jury charge material on the shorthand machine using conflict-free theory. The student will be able to take dictation for five minutes at 120-140 wpm and transcribe with a minimum of 95 percent accuracy. Lecture five hours. Prerequisite: 187, speed requirements of 187 must be met.

283-3 Legal Testimony II. Upon successful completion of this course, the student will be able to take two-voice testimony material on the shorthand machine using conflict-free theory. The student will be able to take dictation for five minutes at 160-180 wpm and transcribe with a minimum of 95 percent accuracy. Lecture five hours. Prerequisite: 281, speed requirement of 281 must be met.

284-3 Literary/Legal II. Upon completion of this course, the student will be able to write literary and legal material on the shorthand machine using conflict-free theory. The student will be able to take dictation for five minutes at 160-180 wpm and transcribe with a minimum of 95 percent accuracy. Lecture five hours. Prerequisite: 282, speed requirement of 282 must be met.

288-3 Introduction to Realtime Technology. Upon successful completion of this course, the student will be able to operate a realtime translation system in simulated environments. Class time will be spent in developing speed and accuracy in the role of the realtime reporter in proceedings. Lecture three hours. Prerequisite: 114.

289-3 Court Reporting Procedures. Upon successful completion of this course, the student will be able to report the spoken word, transcribe shorthand notes, mark exhibits, administer the oath, and understand the judicial procedures and professionalism in the field of court reporting. Prerequisite: 114 or concurrent enrollment.

290-2 to 8 Cooperative Office Experience. Upon successful completion of this course, the student will be able to apply knowledge and skills learned in classroom situations to on-the-job situations in an office. Students will acquire knowledge related to securing a position, keeping a position, and advancing and growing in a career. Two hours per week are spent on related classroom instruction, and 15 or more hours per week (depending upon semester hours credit) are spent working on the job. Student must secure appropriate position which meets the cooperative education experience requirements. Prerequisite: sophomore status within Office Systems and Specialties and in good standing.

299-1 to 16 Individual Study. Provides students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor and chair is required.

307-3 Office Records and Principles of Information Management. Upon successful completion of this course, the student will have a comprehensive understanding of the field of records and information management with emphasis on the application of scientific and systematic management techniques needed to control recorded information in an organization. The student will understand all of the elements of records management from creation through maintenance and protection to final disposition. Basic courses in management, office systems and computer software applications are recommended.

308-3 Office Forms Design, Analysis and Control. Upon successful completion of the course, the student will understand the concepts of form management as applied to: (1) the procedures to follow in order to implement a program within an organization; (2) analyzing and designing and/or redesigning business forms; and (3) forms construction, printing technology, paper types, forms procurement, forms specifications and inventory control. Prerequisite: 307.

309-3 Office Systems/Micrographics. Upon successful completion of this course, the student will understand the fundamental principles involved in micrographic technology including the technical aspects of the micrographic process, fundamental principles involved in systems design and development, and practical uses of micrographic systems particularly as they relate to the information management field. Prerequisite: 307. Recommended prerequisite: Information Management Systems 109 or 229.

310-3 Office Systems and Modern Archives. Upon successful completion of this course, the student will understand the archival profession as a segment of the broader field of records/information management, its institutions and collections; the methodologies and issues in the field; and the archival field's relationship to records management under the life cycle concept of comprehensive records management. Prerequisite: 307.

313-1 to 6 Machine Shorthand Speedbuilding. Upon completion of this course, the student will be able to write literary, jury charge and two-voice testimony materials at speeds of 140-225 wpm for five minutes using conflict-free machine shorthand theory. The student will transcribe with a minimum of 95 percent accuracy. Lecture three to five hours depending on credit hours registered for. Laboratory three to five hours depending on credit hours registered for. Prerequisite: 186 and 187.

316-1 Legal Ethics. Upon completion of this course, the student should understand the canons of professional ethics as listed in *Cochran's Law Lexicon* and the NSRA's *Code of Ethics*; have observed the etiquette and duties of court reporters by attending court sessions; have taken testimony in court and transcribed that copy in proper, final form; have taken jury duty charges and legal dictation in class at speeds of 100 to 180 words a minute and transcribed that copy with a minimum of 95 percent accuracy; have taken depositions and transcribed them in state-approved form. Lecture/laboratory two hours.

319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credit to be individually arranged. Mandatory Pass/Fail.

320-1 to 12 Office Systems and Specialties Cooperative Education. Each student will participate in a departmentally approved cooperative education program that includes formal instruction, training and/or career-related work experience. Students receive a salary or wages and engage in pre-arranged assignments related to their academic program and career objectives. Department faculty evaluations, cooperative agency student performance evaluations and student reports are required. Hours and credit to be individually arranged. Prerequisite: consent of instructor.

341-3 Office Systems and Technologies. The course provides an overview of information systems technologies including computer hardware and software, document information management and telecommunications. It focuses on systems strategies for office automation with emphasis on organizational characteristics, human resources and ergonomics in regard to the planning, design and management of information systems. Three credit hours. Prerequisite: 114 or equivalent.

350-1 to 32. Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. This course may be classified as independent study. Prerequisite: consent of instructor.

385-3 Legal Testimony III. Upon successful completion of this course, the student will be able to take two-voice testimony material on the shorthand machine using conflict-free theory. The student will be able to take dictation for five minutes at 200-225 wpm and transcribe with a minimum of 95 percent accuracy. The student must pass three two-voice testimony takes with 95 percent accuracy. Students must earn a grade of C or better. Lecture five hours. Prerequisite: 283.

386-3 Literary/Legal III. Upon successful completion of this course, the student will be able to write literary and legal material on the shorthand machine using conflict-free theory. The student will be able to take dictation for five minutes at 180-200 wpm and transcribe with a minimum of 95 percent accuracy. The student must pass three literary takes at 180 wpm and three legal opinion/jury charge takes at 200 wpm with a minimum of 95 percent accuracy. Lecture five hours. Prerequisite: 284 with a grade of C or better.

388-3 Real Time Closed Captioning Technologies. Upon successful completion of this course the student will build a conflict-free dictionary using computer-aided transcription. By using stenotype input, the student will develop knowledge, skills and abilities to produce accurate simultaneous translation and display of live proceedings utilizing a computer-aided translation system. Prerequisite: 114, 288.

389-3 Court Practicum. Upon successful completion of this course, the student will have spent a minimum of 40 hours of machine writing in an approved freelance reporting office and/or an official reporting office and produced a usable transcript of the proceedings. The student will observe courtroom and freelance procedures, will write on the shorthand machine, will receive on-the-job training under the guidance of experienced reporters, and will participate in classroom activities related to the practicum experience. Prerequisite: 114 and concurrent enrollment in 385.

412-3 Office Systems Planning and Implementation Strategies. (Same as Workforce Education and Development 412.) This course examines planning for office systems development through investigation of procedures and systems used in various types of offices, including a study of work flow, the processing of information and employee and work group interactions. Topics detail office information systems from the perspective of the end users by studying development and implementation processes, tactics and strategies based upon systems planning results through a field based project. Not for graduate credit. Prerequisite: 341.

414-3 Office Systems Applications. This course examines the applications of office automation technologies from the end user perspective to enhance the productivity of all levels of office employees. The course focuses on the relationship of automated technologies and corporate goals. Comparative and evaluative techniques are stressed for appropriate selection of hardware and software, as are basics of telecommunication. Not for graduate credit. Prerequisite: 341.

415-3 Integrated Office Systems. This course is the capstone course in the study of office systems and involves the synthesis, application and evaluation of advanced concepts related to current office systems, principally through case study analysis. Topics covered include technological, human, organizational and procedural issues related to office systems management. Not for graduate credit. Prerequisite: 412 and 414.

416-3 Telecommunications. This course examines telecommunications in office systems including the computer technology and equipment components required in information interchange via voice, text, data and image. Topics include telephony, data codes, protocols, network architectures, local area networks, communications media, hardware and software. Telecommunication concepts, management issues and practical applications are integral parts of this course with emphasis on the use of telecommunications to facilitate information interchange. Not for graduate credit. Prerequisite: 414.

485-3 Legal Testimony IV. Upon successful completion of this course, the student will be able to write two-voice and four-voice testimony material on the shorthand machine using computer-compatible theory. The student will be able to take dictation for five minutes at 225 wpm to 240 wpm and transcribe with 95 percent accuracy to complete this course. Not for graduate credit. Prerequisite: 385.

486-3 Literary/Legal IV. This course is designed to enable the student in court and conference reporting to develop an advanced speed level on one-voice literary, jury charge and/or legal opinion material. Emphasis will be placed on various speedbuilding techniques in machine shorthand and information in English, current events, vocabulary development, and geography to allow the student to progress at 20-40 words per minute on literary, jury charge and/or legal opinion material. Not for graduate credit. Prerequisite: 386 with a C or better.

Paralegal Studies for Legal Assistants (PARL)

300a-3 Legal Analysis, Research and Writing I. After examining the litigation process and the structure of federal and state court systems, students will be introduced to case and statutory analysis and to an understanding of the role of paralegals in the litigation process. They will learn how to analyze and synthesize written opinions and will complete several writing projects.

300b-3 Legal Analysis, Research and Writing II. Students will continue to develop their analytical skills and will learn how to conduct effective legal research. Students will use the results of their research in connection with several additional writing projects, including memoranda of law and appellate briefs. Employment opportunities for paralegals and their professional responsibilities will be stressed throughout the course. Prerequisite: passed 300a with a grade of C or better.

310-3 Civil Procedure. Students will examine the lawyers' and paralegals' roles in handling civil cases, and the means by which the objectives of litigation may be achieved. Strategy and mechanics of civil procedure

will be explored in depth, and students will be required to prepare a complaint, discovery requests, and initial appellate documents.

320-3 Estates and Trusts. Students will study the more common forms of wills and trusts and the fundamental principles of law applicable to each; the course will analyze the administration of estates under the Illinois Probate Act.

330-3 Legal Forms of Business Organizations. Includes a review of the lawyer's role in the formation of business entities, including sole proprietorship, partnerships, and corporations, with a survey of the fundamental principles of law applicable to each and the preparation of documents necessary to the organization and operation of each. The student will be prepared to draft articles of incorporation and other legal documents relevant to the role of a paralegal in a modern law office.

340-1 to 12 Internship in Paralegal Studies. Supervised on-the-job training and experience in public or private offices typically employing paralegals. Student must work ten hours per week for fifteen weeks for each three hours of credit. Only three hours of internship credit applicable to major requirements. Prerequisite: completion of 300a and b with a grade no lower than B and consent of coordinator of paralegal studies program.

350-3 Family Law. This course is a review of the law as it relates to the various aspects of domestic relations including marriage, divorce and separation, alimony, child custody and support, taxes, and illegitimacy and adoption.

Philosophy (PHIL)

102-3 Introduction to Philosophy. (University Core Curriculum) Introduction to fundamental philosophical issues across a broad spectrum. Problems in metaphysics, epistemology and ethics will be among the areas explored. Emphasis throughout is upon developing in the student an appreciation of the nature of philosophical questioning, analyzing and evaluating arguments reflecting on the nature of human existence.

103-6 (3,3) World Humanities. (University Core Curriculum) This course will explore the rise, development and interaction of the major world civilizations as embodied in ideas and their expressions in religion, philosophy, literature and art. The great traditions of Near Eastern, European, Central Asian, Indian, Chinese and Japanese cultures will be examined. (a) The first semester will cover the beginnings of mythic symbolization, the development of moral and religious ideas in the early river civilizations, the dawn of philosophical reflection, and the rise and collapse of the unifying empires of Rome, the Gupta and the Han. (b) The second semester will cover the rebirth of civilizations in Islam, medieval Europe and China; their transformations in the modern era, especially due to science and technology; and the question of contemporary global coexistence and understanding.

104-3 Ethics. (University Core Curriculum) Introduction to contemporary and perennial problems of personal and social morality, and to methods proposed for their resolution by great thinkers past and present.

105-3 Elementary Logic. (University Core Curriculum) Study of the traditional and modern methods for evaluating arguments. Applications of logical analysis to practical, scientific and legal reasoning, and to the use of computers.

204-3 Ancient Philosophy. The birth of Western philosophy in the Greek world, examining such Presocratics as Anaximander, Heraclitus, Pythagoras, and Parmenides; focusing upon the flowering of the Athenian period with Socrates, Plato, and Aristotle. The course will conclude with a discussion of the Hellenistic systems of Stoicism, Epicureanism, and the Neo-Platonic mysticism of Plotinus of the Roman period.

205-3 Modern Philosophy. A survey course covering the major figures and themes in the development of modern philosophy up to Kant. Concentration on the Rationalist and Empiricist traditions and the simultaneous development of modern science.

210-3 The American Mind. (University Core Curriculum) This course will survey the diverse traditions, ideas and ideals that have shaped American culture in the past and today. Major works from Native American, African American, feminist, Puritan, Quaker and American Zen Buddhist writers may be used as well as those from such intellectual movements as the Enlightenment, Transcendentalism and Pragmatism.

211-3 Philosophy and Diversity: Gender, Race and Class. (University Core Curriculum) This course is a philosophical introduction to diverse perspectives within modern American culture. It will address through reading and discussion important contemporary moral and social issues from the perspective of nontraditional orientations including African American, Native American and American feminism. The resources of philosophy and other related disciplines such as psychology, sociology and literature will be used to develop a culturally enriched perspective on important contemporary issues.

300-3 Elementary Metaphysics. Presentation of answers to the most general problems of existence. An attempt to unify all scientific approaches to reality through the laying down of common principles.

301-3 Philosophy of Religion. An analysis of problems in the psychology, metaphysics, and social effects of religion. Among topics discussed are the nature of mystical experience, the existence of God, and problems of suffering, prayer, and immortality.

303I-3 Philosophy and Literature. (University Core Curriculum) An interdisciplinary examination of (1) literary and other artistic works which raise philosophic issues and (2) philosophic writings on the relationship between philosophy and literature. Possible topics include: source of and contemporary challenges to the traditional Western idea that literature cannot be or contribute to philosophy; the role of emotion, imagination and aesthetic value in philosophic reasoning; the role of literature in moral philosophy; and philosophic issues of interpretation.

306-3 Nineteenth Century Philosophy. Survey of 19th century European philosophy, focusing on the development of idealism and romanticism. Readings include selections from Fichte, Schelling, Hegel, and others.

- 307I-3 Philosophy of Science, Nature and Technology.** (University Core Curriculum) Interdisciplinary study of major humanistic critiques of technology, science and nature; analysis of topics such as ecology, the information revolution, aesthetics and ethics in various branches of science and technology, relation of science to technology.
- 308I-3 Asian Philosophy.** (University Core Curriculum) An interdisciplinary examination of some major Asian philosophy traditions, such as Vedanta, Buddhism, Confucianism, Taoism, or Sufism, in their historical and social contexts.
- 309I-3 Philosophy of Politics, Law and Justice.** (University Core Curriculum) An interdisciplinary exploration of classical and modern theories of law and justice with special attention to their implications for important contemporary political issues.
- 313-3 Chinese Philosophy.** Historical and comparative study of Confucianism, Taoism, Mohism, Legalism, and Buddhism.
- 315-3 Indian Philosophy.** A survey of Hinduism, Buddhism and Jainism in their historical and cultural context. Emphasis on *Upanishads*, *Bhagavad Gita* and Buddhist scriptures.
- 317-3 Philosophy of Buddhism.** Survey of ancient and modern Buddhist thought in India, China and Japan.
- 320-3 Deductive Logic.** Main forms of deductive inference. Emphasis on the use of the symbolism of modern logic to evaluate inferences.
- 340-3 Ethical Theories.** Nature of ethics and morality, ethical skepticism, emotivism, ethical relativism, and representative universalistic ethics. Bentham, Mill, Aristotle, Kant, Blanshard, and Brightman.
- 342-3 Legal and Social Philosophy.** Discussion of contemporary institutions designed to achieve socially desirable goals (e.g., guaranteeing equality of opportunity, protecting individual liberties, assuring a fair distribution of wealth, minimizing violent behavior) and the philosophical theories that serve as the foundation for the continued existence or reform or abolition of these institutions (e.g., the theories of Mill, Rawls, and Kant).
- 344-3 The Biomedical Revolution and Ethics.** Changes in biology and medicine have brought into sharp focus such problems as allocation of scarce medical resources, use of human subjects in experiments, abortion, euthanasia, genetic screening, truth-telling in medical practice, moral rights of patients and other matters. This course brings ethical principles to bear on these issues.
- 362-3 Science and Technology in Western Societies.** A study of the development and significance of science and technology in the shaping of western societies since the scientific revolution. Historical, philosophical, and sociological perspectives will be used to understand the relationships between science and technology and between these and other cultural and religious values.
- 371-3 Introduction to Contemporary Phenomenology.** Introductory survey of individual thinkers and questions in the contemporary phenomenological tradition: Husserl, Sartre, Merleau-Ponty, Levinas, and Ricoeur.
- 375-3 Ecology and Ethics.** An exploration of several views of the relationship between human beings and the natural world. This course will examine the changing paradigms of environmental studies for insights on our epistemological and moral approaches to nature. Both classical and contemporary literature on nature will be used. Such topics as the Gaia hypothesis, ecofeminism, deep ecology, and the use of nature for human purposes will be addressed.
- 389-3 Existential Philosophy.** Surveys the two main sources of existentialism, the philosophies of Kierkegaard and Nietzsche, with occasional reference to thinkers such as Sartre, Heidegger, Buber, Marcel, and others.
- 397-6 (3,3) Undergraduate Philosophy Seminar.** Small group discussion of topics in philosophy.
- 400-3 Philosophy of Mind.** An investigation of the philosophic issues raised by several competing theories of mind, focusing on the fundamental debate between reductionistic accounts (e.g., central state materialism, identity theories of the physical and mental) and views which reject such proposed reductions. Traditional and contemporary theories will be examined. Designed for students in the life and social sciences with little or no background in philosophy as well as philosophy students.
- 415-3 Logic of Social Sciences.** (Same as Sociology 415.) An examination of the theoretical structure and nature of the social sciences and their epistemological foundations. The relationship of social theory to social criticism; theory and praxis. Historical experience and social objectivity. Social theory as practical knowledge.
- 420-3 Symbolic Logic.** Survey of basic concepts, decision procedures, and proof techniques of modern symbolic logic.
- 425-3 Philosophy of Language.** (Same as Speech Communication 465 and Linguistics 425.) An investigation into the way in which language is based on the nature of human cognitive structures, including metaphor, prototypes, frames, and various kinds of imaginative structure. Central topics include the grounding of meaning and conceptual structure in bodily experience, the role of imagination in reasoning, and the metaphorical nature of thought.
- 435-9 (3,3,3) Philosophy of Science.** (a) Critical survey of influential description of scientific method and theory construction. Topics include the relationship between observation and theory confirmation, explanation, prediction, theory of change and discovery, and view of scientific rationality. Historical cases will serve to focus the discussions. (b) Philosophy of the Special Sciences. This course will focus on philosophical issues within a specific science such as Biology, Physics, or Psychology. Theory, method, and historical development of the specific science will be examined. (c) Special Topics in the Philosophy of Science. This course will provide a detailed focus on specific orientation or topic relevant to philosophy of science. Topics would include naturalized epistemology, evolutionary epistemology, history and philosophy of science, feminist epistemology, modern science, and philosophy of nature.
- 441-3 Philosophy of Politics.** (Same as Political Science 403.) The theory of political and social foundations; the theory of the state, justice, and revolution. Classical and contemporary readings such as: Plato, Aristotle, Hobbes, Locke, Rousseau, Marx, Dewey, Adorno and others. Prerequisite: 340 or Philosophy 102 or consent of instructor.

443-3 Philosophy of History. The rise of historical objectivity and the science of history. Classical and modern theories of history. History as the foundation of social knowledge. The critique of history as universal perspective. Prerequisite: consent of instructor.

446-3 Philosophical Perspectives on Women. (Same as Women's Studies 456.) Discussion of contemporary views of women and social issues from a feminist perspective.

460-3 Philosophy of Art. We will examine several important theories that define art by focusing in on only one aspect, for example, imitation, expression, form, institutional setting, or even indefinability. What role does imagination play in each of these accounts, and does this tell us something important about how people experience their world?

468-9 (3,3,3) Kant (a) First Critique; (b) Theory of Morality; (c) Aesthetic Theory.

469-3 Hellenistic and Roman Philosophy to Augustine. The career of philosophy during the Hellenistic, Roman and Early Medieval period, especially as a means of personal salvation exploring such figures and movements as: Epicurus, Stoicism, the Middle Academy, Skepticism, Gnosticism, Plotinus, Early Christianity, Augustine, and Boethius. Prerequisite: 304 or consent of instructor.

470-6 (3,3) Greek Philosophy. (a) Plato. A general survey of the Platonic dialogues from the Socratic period through the middle, with some selections from the Late period. Such Dialogues will be emphasized as: Protagoras, Gorgias, Euthydemus, Charmides, Meno, Phaedo, Symposium, Republic, Phaedrus, Sophist and Timaeus. **(b) Aristotle.** A general survey of the Aristotelian philosophy including the theory of nature, metaphysics, ethics, and political philosophy. Readings will consist of selections from the corpus. Prerequisite: 304 or consent of instructor.

471-3 Medieval Philosophy. An examination of the synthesis of Greek philosophy with the Judeo-Christian and Islamic religions, exploring such figures as Augustine, Boethius, Avicenna, Averroes, Abelard, Maimonides, Thomas Aquinas, Duns Scotus, Ockham, and Cusanus. Prerequisite: 304 or consent of instructor.

472-6 (3,3) The Rationalists. (a) Descartes. A study of the Philosophy of Rene Descartes, concentrating on his major writings, *Meditations*, *Discourse on Method* and *Principles of Philosophy*, as well as his philosophical correspondence. May include study of Descartes' relation to the later Rationalists. **(b) Study of the philosophy of one or more of Spinoza, Leibniz, Arnauld, Malebranche, Wolff.** May include study of the relation of these philosophers to Descartes. Prerequisite: 205 or consent of instructor.

473-6 (3,3) The Empiricists. (a) Locke; (b) Hume. Study of the principles of British empiricism as represented by either Locke or Hume. May also include study of Berkeley. Prerequisite: 305 or consent of instructor.

474-12 (3,3,3,3) 19th Century Philosophers. (a) Hegel; (b) Kierkegaard; (c) Marx; (d) Nietzsche. Prerequisite: 306 or consent of instructor.

475-3 Asian Philosophy. Topics in Confucianism, Taoism, or Buddhism.

480-3 History of Analytic Philosophy. An introduction to the works of several major 20th Century philosophers in the analytic tradition, including several of the following: Frege, Russell, Moore, Wittgenstein (early and later), members of the Vienna Circle, Ayer, Ryle, Quine, Putnam, Davidson. Includes discussion of challenges to the tradition that have developed within it.

482-3 Recent European Philosophy. Philosophical trends in Europe from the end of the 19th Century to the present. Phenomenology, existentialism, the new Marxism, structuralism, and other developments. Language, history, culture and politics.

486-3 Early American Philosophy. From the Colonial period to the Eve of World War I. This course will trace the transplantation of European philosophy to the New World. Puritanism, Quakerism, the theory of the American Revolution, the philosophical basis of the Constitution, transcendentalism, idealism, Darwinism and pragmatism and such figures as: Jonathan Edwards, John Woolman, Thomas Jefferson, James Madison, Ralph Waldo Emerson, Josiah Royce, Charles Sanders Peirce, and William James.

487-3 Recent American Philosophy. From World War I to the Present. The major American philosophers of the 20th Century, covering such issues as naturalism, emergentism, process philosophy, and neopragmatism. Figures include: John Dewey, George Herbert Mead, George Santayana, Alfred N. Whitehead, C. I. Lewis, W. V. Quine, and Richard Rorty.

490-2 to 8 Special Problems. Hours and credits to be arranged. Courses for qualified students who need to pursue certain topics further than regularly titled courses permit. Special topics announced from time to time. Students are invited to suggest topics. Prerequisite: consent of department.

491-1 to 6 Undergraduate Directed Readings. Supervised readings for qualified students. Open to undergraduates only. Prerequisite: consent of instructor. Additional hours beyond three (3) must have approval of the Director of Undergraduate Studies.

499-3 Senior Thesis. A paper on a topic agreed to by the student and a faculty thesis director. The paper should be of sufficient length to manifest the student's mastery of a philosophical area and logical and critical skills. Not for graduate credit. Prerequisite: consent of instructor and department.

Physical Education (PE)

100-2 Foundations of Physical Education. An orientation to physical education including relationship of physical education to education and current trends and philosophies which underlie the practice of physical education and sport.

101-2 Current Concepts of Physical Fitness. (University Core Curriculum) To foster a thorough understanding of scientific principles of physical fitness and to enhance the ability to utilize physical exercise toward achievement of healthful living.

102-2 to 12 (2 per section) Aquatics. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Swimming suits and towels are provided; however, stu-

dents may provide their own one piece swimming suit (no pockets), towel and cap (optional). Long hair must be tied back. Goggles are recommended for some classes. A \$2 fee is required for all classes listed. Mandatory Pass/Fail grading. (a) Swimming I: Orientation to Swimming. Prerequisite: course is open only to non-swimmers. (b) Swimming II: 102a or equivalent skills and safe in deep water. (c) Skin Diving. Prerequisite: consent of instructor and pass swimming test prior to enrollment. (d) Scuba Diving. Fee and successful completion of National Test required for certification, special sections have extra charge for field trips. Prerequisite: consent of instructor and pass swimming test prior to enrollment. (e) Aquatics Emergency Water Safety. Course prepares students to meet the requirements for certification by the American Red Cross in emergency water safety. Prerequisite: 101a or equivalent swimming skill; five minutes continuous swim: fifty yards each of sidestroke and front crawl in good form; jump into deep water, swim twenty feet under water, surface and tread water for one minute. (f) Lifeguarding. Fee and successful completion of National Test required for certification. Prerequisite: 102b or equivalent skill and pass swimming test first day of class (500 yard continuous swim using front crawl, sidestroke and breaststroke, treadwater two minutes-legs only, retrieve a ten pound brick from seven foot depth).

103-2 to 12 (2 per section) Dance. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$2 is required for all classes listed. (a) Ballet, (b) Ballroom, (c) Jazz, (d) Modern, (e) Square, (f) Tap.

104-2 to 12 (2 per section) Fitness. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$2 is required for all classes listed. (a) Aerobic dance, (b) Cycling, bicycle required and helmet, (c) Running, (d) Strength training, (e) Walking and jogging, (f) Weight control.

105-2 to 14 (2 per section) Individual and Dual Activities. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$2 is required for all classes listed. (a) Badminton, three shuttlecocks required, (b) Bowling, additional lane fee of \$18 per credit hour and bowling shoes required, (c) Golf, six plastic golf balls required, (d) Racquetball, three racquetballs required, (e) Tennis, three tennis balls and racquet, (f) Self defense, (g) Wrestling.

106-2 to 10 (2 per section) Team Activities. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$2 is required for all classes listed. (a) Basketball, (b) Flag football, (c) Soccer, (d) Softball, (e) Volleyball.

107-1 to 4 Restricted Physical Education. For physically challenged students as recommended by Health Service and consent of instructor. Course not designed for students who can take other physical activity courses. Mandatory Pass/Fail.

113-2 Aquatics. This course provides the opportunity for the student to improve one's ability in swimming skills and strokes. It is designed to prepare the student to be safe in, on and around the water. It prepares the student to react in emergency situations by knowing and having the ability to perform the proper rescue techniques to use while maintaining one's own safety. Prerequisite: 102a or equivalent skill.

114-2 Concepts of Physical Fitness. A course designed to provide physical education students with the best scientific evidence to promote health related physical fitness.

115-3 Exercise, Conditioning, and Weight Training. Designed to improve personal fitness, introduce students to different training programs, their benefits and means of evaluation.

116A-1.5 Team Sports I. This course is designed to expose the student to the basic skills, rules and strategies in the team sports of soccer, flag football, and volleyball.

116B-1.5 Team Sports II. This course is designed to expose the student to the basic skills, rules and strategies in the team sports of basketball, floor hockey, and softball.

117-1 Racquet Sports. This course is designed to teach the basic skills, techniques, strategies and rules in tennis, badminton, and racquetball.

118A-1 Dance I. This course is designed to introduce the student to the fundamentals of square, folk, and social dance.

118B-1 Dance II. This course is designed to introduce the student to the fundamentals of rhythm and rhythmic analysis of basic dance steps, the fundamentals of modern dance, and the basics of aerobic dance.

120-1 Individual Sports. This course is designed to help students develop the basic skills and knowledge in archery, bowling, and golf. A fee of \$15 or less and equipment purchase.

121-1 Basic Gymnastics and Combatives. This course is designed to provide an introduction to the basic skills in stunts, tumbling, gymnastics, and combatives.

122-2 Track and Field. This course is designed to provide an introduction to the basic skills and knowledge in track and field activities.

160-2 to 8 (2,2,2,2) Dance Concert Production Ensemble. A select group which performs, choreographs, and produces one dance concert per semester and tours as feasible. Prerequisite: audition prior to first registration and consent of instructor each succeeding semester. Participation as an apprentice of Southern Illinois Repertory Dance Theatre for one semester.

170-2 Varsity Sports. The course is designed to teach skills and strategies as well as the rules and practices involved in a selected varsity sport. Prerequisite: Names must appear on an official NCAA squad list and consent of instructor.

202-3 Physical Activities for Children and Youth. Developing activities for motor perceptual development and skill acquisition appropriate for different age levels of children and youth. Tennis shoes required. Dress must permit ease of movement. Prerequisite: at least sophomore standing.

205-2 Mental Skills for Sport and Performance. This course is designed for individuals involved in sport, exercise, and/or performance with an interest in learning about and developing a repertoire of psychological skills for use in sport, performance, and daily life.

225-2 Introduction to Athletic Training. This course is designed for students pursuing a career in athletic training. The course provides knowledge about the NATA, job opportunities, incidence of injury, basic injury prevention, recognition and treatment. It also provides the student with information concerning the recognition and treatment of illnesses and conditions common to athletes.

226-1 Taping Techniques. To familiarize the student with all aspects of taping including practice taping experience for athletic injuries.

245-3 Sport and Modern Society. (Same as Sociology 233.) Viewing sport as an integral aspect of society and culture, this introductory course examines the various ways in which sport reflects the broader society and how sport constitutes an important cultural product. In particular, the course explores (1) how sport shares many of the same characteristics as other social institutions (e.g., family, education, politics, economy, mass media), (2) how sport reinforces social inequalities, and (3) how sport serves as an arena for social change and resistance.

257-1 to 5 Current Work Experience. The student receives credit for current work experiences. Credit is awarded for many practical experiences and must be related to physical education and in process. Prerequisite: at least C average in physical education after 12 hours. Mandatory Pass/Fail.

258-1 to 5 Work Experience. The student receives credit for past work experiences. Credit is awarded for many practical experiences and must be related to physical education and already completed. Mandatory Pass/Fail. Prerequisite: at least C average in physical education courses after 12 hours.

301-2 Organization and Administration of Physical Education. Consideration of the special problems related to the organization, administration and curriculum in physical education.

302-2 Kinesiology of Normal and Pathological Conditions. Force system, its relation to the mechanics of muscle action. Analysis of muscular-skeletal forces involved in physical activities. Prerequisite: Physiology 220.

303-2 Kinesiology. Force system, its relation to the mechanics of muscle action. Analysis of muscular-skeletal forces involved in physical education activities. Prerequisite: Physiology 220.

304-2 Mechanical Basis of Human Movement. Applies body mechanics with application of mechanical laws and principles to performance in physical activities. Prerequisite: 303 or consent of instructor.

305-2 Methods of Teaching Physical Education for Special Populations. An introductory course designed to provide the physical education generalist with the minimal competencies needed to teach the mildly physically challenged students in the mainstreamed or special education setting. The course will also aid the special education classroom teacher in providing appropriate physical education. Prerequisite: 317 and junior standing.

306-1 Advanced Swimming, Skill and Analysis. Prerequisite: Physical Education 102b or equivalent.

307-2 Water Safety Instructor. Methods of teaching swimming and basic emergency water safety. American Red Cross Water Safety Instructor certificate may be earned. Fee and National Test are required for certification. Prerequisite: Physical Education 102e or equivalent certification and concurrent enrollment in PE 306.

308-2 to 10 (2,2,2,2,2) Instructor of Aquatics. (a) Handicapped. (b) Skin diving. (c) Scuba diving. (d) Canoeing. (e) Swimming. Prerequisite: consent of instructor.

309-3 Creative Movement for Children. Curriculum planning practicum experience using movement as a means of self-expression for the child to enhance mental, emotional, and physical development. During the first eight weeks, students will study various aspects of dance as can be applied to creative movement for children; the second eight weeks, students will work directly with children on a weekly basis. Prerequisite: sophomore standing.

310-2 Aquatics Facilities Management. Learning experiences designed to aid in the development of aquatic specialists who can efficiently work toward satisfactory solutions to the problems inherent in functional design, operation, and maintenance of aquatic facilities that are associated with schools, municipalities, and other organizations.

311-2 Lifeguarding Instructor. The skills, techniques and methods of preparing qualified individuals to prepare persons to become lifeguards at pools and open-water, non-surf beaches, American Red Cross Lifeguard Instructor Certification may be earned. Fee and National Test required for certification. Prerequisite: Physical Education 102f or equivalent certification. Lifeguarding experience.

312-2 Science and Pedagogy of Swimming. Designed to provide students: (1) a scientific basis for teaching swimming and (2) a necessary background as a future professional in the aquatic field. Prerequisite: 307 or equivalent. Previous teaching or coaching swimming required.

314-2 Methods of Teaching Elementary Physical Education. The purpose of this course is for physical education students to develop knowledge and skills for planning, implementing, and evaluating appropriate and effective physical education programs at the elementary school level. The course will consist of lectures, class participation in demonstrations of teaching movement for children, observation of children participating in activity and also peer teaching by class members. Prerequisite: 318 and 317.

315-2 Methods of Teaching Dance. Curriculum planning for the dance student, covering analysis of dance fundamentals, identifying dance terminology, movement phrasing, accompaniment for class, and lesson planning. Focus will be on the structuring of modern dance and ballet classes at the beginning level. Dance attire required. Prerequisite: two semesters of modern technique and two semesters of ballet, both above the core curriculum education level.

316-3 Advanced Level Sports Skills: Scuba. Prerequisite: consent of instructor.

317-2 Motor Development. The purpose of this course is to provide an introduction to the normal development of motor behavior in children and adolescents, biological and environmental variables which affect motor skill acquisition; and the assessment of motor development in children and youth, with particular emphasis on the application of the knowledge to teaching and learning situations.

318-2 Motor Learning. Study of theory and research emphasizing the psychological and neural basis of underlying the learning of motor skills; application to physical education teaching and athletic coaching environments. Prerequisite: Psychology 102.

319-2 Physiological Foundation of Exercise and Sport. This course is designed to provide basic physiologic information regarding exercise and sport performance. This course is open to Teacher Education majors only. Prerequisite: Physiology 201 or equivalent.

320-3 Physiological Basis of Human Movement. Immediate and long range effects of muscular activity on the systems. Integrative nature of body functions and environmental influences on human performance efficiency. Laboratory to be arranged. Prerequisite: Physiology 201 or equivalent.

321-2 Biomechanical Analysis of Sport. The science of human motion; study of anatomical and mechanical principles as they relate to an understanding of skillful and efficient motion. This course is open only to undergraduate Teacher Education students. Prerequisite: Physiology 220.

322-1 Teaching Practicum. Laboratory experience assisting with a Physical Education courses or in a school setting. Mandatory Pass/Fail.

323-2 Methods of Teaching Secondary Physical Education. The purpose of this course is for physical education students to develop knowledge and skills for planning, implementing, and evaluating appropriate and effective physical education programs at the secondary school level. The course will focus on knowledge and skills related to effective instructional strategies, efficient management and organizational principles, and effective class control and motivational techniques specific to teaching physical education for secondary school students. Prerequisite: 317, 318.

324-2 Essentials of Athletic Training. This course provides basic information regarding prevention, recognition, first aid, taping and wrapping of athletic injuries. The student will be required to successfully demonstrate basic strapping techniques, bandaging, splinting and CPR. The course leads to certification in first aid and CPR. Certification fees payable to the local organization will be collected in class.

325-2 Training Room Techniques. Intended for the student who wishes to complete a specialty as athletic trainer. Provides knowledge concerning the organization and administration of a training room, the installation and use of its modalities, and general procedures of training room operational functions. Prerequisite: Physiology 220 or 301.

326-3 Emergency Care and Prevention of Athletic Injuries. The theoretical and practical methods of preventing and treating athletic injuries; techniques of taping and bandaging; emergency first aid; massage; use of physical therapy modalities. Lecture and laboratory sessions. Prerequisite: Physiology 220 or 301.

327-2 Medical Aspects of Athletic Injury. The student will acquire an advanced understanding of the proper prevention and rehabilitation of athletic injuries. The student will also understand medical and surgical procedures and their consequent factors to be considered in treatment programs. Prerequisite: 326.

328-2 (1, 1) Field Experience in Athletic Training. The student will be responsible for prevention of injuries, taping, rehabilitation, evaluation, and coverage of practices and games for an intercollegiate athletic sport. Prerequisite: 327 and permission by athletic training program coordinator.

329-3 Principles and Procedures for the Conduct of Interscholastic Athletics. An examination of the history, values, and trends in extracurricular sports programs. A review of regulations and standards as determined by the governing bodies for men's and women's sports and an in-depth study of coaching and administrative procedures. Prerequisite: competitive experience recommended and consent of instructor.

330-2-26 (2 per part) Techniques and Theory of Coaching. (a) Basketball. (b) Football. (c) Swimming. (d) Baseball. (e) Track and field. (f) Wrestling. (g) Tennis. (h) Gymnastics. (i) Golf. (j) Badminton. (k) Field hockey. (l) Softball. (m) Volleyball. Prerequisite: consent of instructor.

341-2 Assessment of Musculoskeletal Injuries. The student will be introduced to the techniques in evaluating injuries to muscles and joints. Prerequisite: basic athletic training course and consent of instructor.

345-2 Psycho-Social Aspects of Sport and Physical Activity. This course exposes students to psychological and sociological concepts that influence or are influenced by involvement in sport and physical activity. Primarily designed for future physical education teachers and coaches, the course examines how psycho-social principles relate to teaching and coaching contexts.

355-2 to 14 (2,2,2,2,2,2) Practicum. (a) Aquatics. (b) Special populations. (c) Coaching. Mandatory Pass/Fail. (d) Athletic training. (e) Dance. (f) Exercise science. (g) Teaching of sport. Prerequisite: restricted to written consent of instructor.

360-1 to 2 Theory of Officiating. This course provides information on officiating sports. The course will cover the basic theory of officiating and provide the student with the opportunity to gain practical experience from the officials perspective in selected sport activities. Prerequisite: consent of instructor.

370-2 Measurement and Evaluation in Physical Education. The theory of measurement in physical education, the selection and administration of appropriate tests of motor skills and the interpretation of results. Prerequisite: Education 317 or concurrent enrollment.

375-2 Introduction to Professional Literature in Physical Education. An introduction to the professional literature in physical education with emphasis on the reading of research-oriented journals. Prerequisite: senior standing and grade point average of 3.25.

380-2 Aerobics. A study of theoretical and practical framework within which the concepts of aerobic fitness exist. Both an evaluation and a hands-on experience with the direct and indirect procedures commonly used to determine oxygen uptake capacity and aerobic power. A thorough discussion of the meaning of aerobic fit-

ness as it applies to general fitness of the adult and aging person. Prerequisite: 320, junior standing, and approval of the instructor in the semester prior to enrollment.

381-2 Exercise and Weight Control. A theory practicum course dealing with the interrelationships of exercise and diet as factors influencing weight control. Emphasis on the practical delivery of programs of weight control in the context of adult programs of physical fitness. Prerequisite: 320, junior standing, and approval of the instructor in the semester prior to enrollment.

382-3 Graded Cardiovascular Testing and Exercise Prescription. A study of the controlled use of exercise to evaluate the cardiovascular function of an adult population and in specific persons of middle and older aged groups. The scientific basis of recommending exercise programs as a preventive rather than a treatment of heart disease will be stressed. Prerequisite: 320, junior standing, and approval of the instructor in the semester prior to enrollment.

407-2 Advanced Theory and Techniques in the Prevention and Rehabilitation of Athletic Injuries. The application of scientific principles to the theoretical and practical methods of preventing and treating athletic injuries. Prerequisite: Basic Athletic Training Course.

408-2 Physical Fitness: Its Role and Application in Education. An analysis of physical fitness as it relates to the total well-being of people. Specific units on the fitness parameters, hypokinetic disease and physical inactivity, stress, current level of fitness, training programs, and the beneficial aspects of regular exercise. Major emphasis is placed upon incorporating current thinking on physical fitness into the development of teaching models.

409-3 Social Aspects of Sport and Physical Activity. This course presents the theoretical and empirical foundations of sport sociology. A research-based approach is used to explore the relationship of sport to various social institutions, as well as the role of social processes (e.g., socialization, discrimination, stratification, conflict) in sport and physical activity contexts.

410-3 Psychological Aspects of Sport and Physical Activity. This course presents the theoretical and empirical foundations of sport psychology. Operating from a conceptual rather than an applied framework, this class develops an understanding of social psychological phenomenon and processes related to participation in sport and physical activity (e.g., personality, anxiety, arousal, achievement motivation, social facilitation, aggression, pro-social behavior, group dynamics).

412-3 Research and Practice in Applied Sport Psychology. This course examines current research and practice in applied sport psychology. Emphasis will be placed on moving from theory into practice on sport-specific individual differences, motivational approaches, and interventions.

418-2 Administration of Aquatics. The study of comprehensive aquatic programs, their implementation and coordination.

420-3 Physiological Effects of Motor Activity. The general physiological effects of motor activity upon the structure and function of body organs; specific effect of exercise on the muscular system. Prerequisite: Physiology 201 or equivalent.

421-3 Principles of Skeletal Muscle Action. The neural, physiological and mechanical basis of skeletal muscle action and plasticity in relation to the expression of strength and power. Prerequisite: Physiology 209 or equivalent.

425-2 Current Topics in Athletic Training. This course is designed to study and discuss current issues in athletic training and the health care of the athlete.

426-2 Advanced Techniques and Research in Therapeutic Modalities. Specifically designed for the student who wishes to become an athletic trainer and gain knowledge in the application and current research in therapeutic modalities.

493-2 to 4 Individual Research. The selection, investigation, and writing of a research topic under supervision of an instructor. (a) Dance. (b) Kinesiology. (c) Measurement. (d) Motor development. (e) Physiology of exercise. (f) History and philosophy. (g) Motor learning. (h) Psycho-social aspects. Written report required. Prerequisite: consent of adviser and department chair.

494-2 (1,1) Practicum in Physical Education. Supervised practical experience at the appropriate level in selected physical education activities in conjunction with class work. Work may be in the complete administration of a tournament, field testing, individual or group work with special populations, administration of athletics or planning physical education facilities. Prerequisite: consent of adviser.

Physical Therapist Assistant (PTH)

107-3 Introduction to Physical Therapy Practice and Procedures. Students will be able to describe the historical background, professional, ethical, and legal aspects of physical therapy practice. They will be able to describe the relationship of physical therapy to total health care. They will explain and demonstrate basic skills such as sterile techniques, wound care, and vital signs monitoring. They will be able to perform massage techniques to selected patients. Lecture: two hours. Laboratory: two hours. Prerequisite: program major or consent of instructor.

113-2 Physical Agents I. The students will be able to demonstrate procedures used in the safe application of superficial and deep heat, cryotherapy, ultraviolet, paraffin, and hydrotherapy. Lecture one hour. Laboratory two hours. Prerequisite: program major or consent of instructor.

199-1 to 10 Individual Study. Provides first-year students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program supervisor and department chair.

202-2 Physical Rehabilitative Techniques. The student will be able to demonstrate rehabilitative procedures such as bed positioning, range of motion exercises, transfer activities, gait training, chest physical therapy, goniometry, and will understand the concepts of total rehabilitation. Lecture one hour. Laboratory two hours. Prerequisite: program major or consent of instructor.

203-2 Pathology. The student will be able to understand the fundamental basis of disease including inflammation, cardiovascular diseases, vascular diseases, arthritic conditions and repair of bone and soft tissue injuries. Emphasis will be placed on those conditions treated through physical therapy procedures. Lecture two hours. Prerequisite: Physiology 208 and 209; program major or consent of instructor.

204-2 Physical Therapist Assistant, Practicum I. Students will be able to carry out routine physical therapy assisting procedures with selected patients. They will be able to demonstrate skills in massage, hydrotherapy, range of motion exercises, activities of daily living, and application of heat, cold, and ultraviolet. They will also be able to assist in maintaining records and equipment. Lecture one hour. Clinic four hours. Prerequisite: program major or consent of instructor.

205-2 Physical Therapy Science. The students will be able to describe selected medical and surgical conditions from the standpoint of etiology, clinical signs and symptoms, and physical therapy treatment. Lecture two hours. Prerequisite: program major or consent of instructor; Physiology 208, 209, and 220.

208-3 Therapeutic Exercise I. Designed to teach basic exercises for individual muscles or muscle groups, including breathing, postural exercises, manual muscle testing, and gait analysis, training and balance. Successful students will learn to select exercises for specific results; i.e., increasing strength, coordination, endurance, flexibility, and proper body mechanics. Lecture two hours. Laboratory two hours. Prerequisite: Physiology 220 with a minimum grade of C; program major or consent of instructor.

209-4 (2,2) Therapeutic Exercise II. Successful students will be able to administer therapeutic exercise techniques for specific clinical orthopedic and neurological conditions through demonstrations and supervised application of exercise for selected patients. The student will understand and safely apply the principles of advanced therapeutic exercise techniques such as (a) motor reflexes, sensory integration, normal motor development, and utilization of synergies. Lecture one hour. Laboratory two hours. (b) PNF, joint mobilization, and muscle balancing. Lecture one hour. Laboratory two hours. Prerequisite: 208 with a minimum grade of C; program major or consent of instructor.

213-3 Physical Agents II. The student will be able to demonstrate procedures used in the safe application of electrical currents, electrical muscle stimulation and electrotherapy for pain and healing functions; and other modalities including pelvic traction, cervical traction and intermittent compression. The student will understand and be able to describe the physiological effects, indication and contraindications for each physical agent covered. Lecture two hours. Laboratory two hours. Prerequisite: program major or consent of instructor.

214-3 Physical Therapist Assistant, Practicum II. Students will be able to perform the skills acquired in Practicum I as well as more complex physical therapy assisting procedures with selected patients. They will be able to demonstrate skills in therapeutic exercise and safe application of physical agents. They will be able to assist in maintaining records and developing cooperative spirit with other members of the department. Lecture one hour. Clinic five hours. Prerequisite: minimum grade of C in 107, 113, 202, 203, 204, 208, and 213.

299-1 to 16 Individual Study. Provides students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program supervisor and department chair is required.

319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

321-8 (4,4) Clinical Internship. The successful student will be able to apply previously learned theories and techniques of patient care through closely supervised practicum experience in two separate physical therapy facilities. (a) First six week internship. (b) Second six week internship. Must be taken in a,b sequence. Prerequisite: must be taken concurrently with 322; completion of 107, 113, 202, 203, 204, 205, 208, 209, 213, and 214 with a grade of C or better.

322-2 Clinical Seminar. Students will be able to discuss with the coordinator of the program patient care and problems encountered during internship. They will have the opportunity to evaluate their educational experience at Southern Illinois University at Carbondale and their clinical internship experience. Prerequisite: concurrent enrollment in 321. Mandatory Pass/Fail.

350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions and health service occupations offered through various workshops, special short courses and seminars. Hours and credit to be individually arranged. This course may be classified as individual study. Prerequisite: consent of instructor.

Physician Assistant (PA)

300-8 Physician Assistant I. An introduction to the role and skills of the physician assistant. Students will be introduced to patient's histories, physicals, interviewing and triage skills, and the development of skills necessary to organize information. This course will be in a problem based learning format. Prerequisite: acceptance into Physician Assistant program.

310-16 Physician Assistant II. This course is a continuation of Physician Assistant 300. Students will learn additional skills and roles of the Physician Assistant through learning sessions, observations, practice sessions and actual practice. Students will increase their knowledge and appreciation of primary care, community

medicine and epidemiology through exposure to PBL cases on: depression, family planning /STD/ contraception, hypertension/patient compliance, immunizations, middle ear infections and unintentional injury. Prerequisite: 300.

320-16 Physician Assistant III. A continuation of 310. Students will continue to add to the role and skills of the Physician Assistant. Emphasis will be placed on the common problems and referrals for primary care in rural medicine. Prerequisite: 310.

420-6 Physician Assistant Clinical Rotation I. This is the first and introductory course in a three course sequence. During the three course sequence, students will complete eight clinical rotations including family medicine, obstetrics, pediatrics, surgery, psychiatric, gerontology, emergency and internal medicine. Rotations vary from two to eight weeks at each clinical site. The first rotation is usually eight weeks in family or internal medicine during which students will observe and work under close supervision with a clinical supervisor and physician. Prerequisite: restricted to physician assistant majors, consent of instructor, 3.0 gpa in the major, completion of the first year didactic sequence.

430-12 Physician Assistant Clinical Rotation II. This is the second and intermediate course in a three course sequence. During the three course sequence, students will complete eight clinical rotations including family medicine, obstetrics, pediatrics, surgery, psychiatric, gerontology, emergency and internal medicine. Rotations vary from two to eight weeks at each clinical site. The second rotation will include either family or clinical medicine and depending on scheduling, the student will complete two to three additional rotations. The student will observe and begin to function as a physician assistant for routine health problems under the supervision of a clinical supervisor and physician. Prerequisite: restricted to physician assistant majors, consent of instructor, 3.0 gpa in the major, 420.

440-12 Physician Assistant Clinical Rotation III. This is the third and advanced course in a three course sequence. During the three course sequence, students will complete eight clinical rotations including family medicine, obstetrics, pediatrics, surgery, psychiatric, gerontology, emergency and internal medicine. Rotations vary from two to eight weeks at each clinical site. During the third rotation students will complete all remaining rotations during which they will continue to observe and function more independently as a physician assistant under the supervision of a clinical supervisor and physician. Prerequisite: restricted to physician assistant majors, consent of instructor, 3.0 gpa in the major, 430.

450-2 Senior Seminar. A topical seminar in conjunction with clinical rotation and medical case presentation designed to review and build on the student's medical knowledge base. Problem areas identified during clinical rotations will be utilized as lecture topics. Students will practice board exams, review licensure procedures and prepare for transition to permanent employment. Prerequisite: restricted to physician assistant majors, consent of instructor, 3.0 gpa in the major, 440 or concurrent enrollment.

Physics (PHYS)

101-3 The Physics of Modern Communications: From Hi-Fi Sound to Laser Beams. (University Core Curriculum) The laws of nature necessary for understanding modern communications such as high fidelity, sound, radio, television and laser beams are presented. Topics include wave phenomena, sound, electricity, magnetism and light. Applications to sound recording and communications and the technical vocabulary necessary to critically evaluate high fidelity equipment are emphasized.

102-1 Everybody's Einstein. A non-mathematical presentation of Einstein's relativity theories on a popular level. No prerequisite.

103-3 Astronomy. Fundamental concepts of the physical sciences are used in the exploration of the observable universe. Studies include the history and techniques of astronomy, planets, stars, black holes, galaxies and cosmology. Lectures are supplemented by outdoor astronomical observations and/or indoor laboratory exercises.

202-3 Astronomy. Fundamental concepts of the physical sciences are used in the exploration of the observable universe. Studies include the history and techniques of astronomy, planets, stars, black holes, galaxies and cosmology. Lectures are supplemented by laboratory work, outdoor astronomical observations.

203-6 (3,3) College Physics. Designed to meet preprofessional requirements and the needs of all students in the sciences, except physics and engineering. (a) Mechanics, heat, and sound. Prerequisite: Mathematics 108 and 109 or 111. (b) Electricity, magnetism, light, and some aspects of modern physics. Prerequisite: 203a.

205-9 (3,3,3) University Physics. Designed to meet requirements of physics, engineering, and chemistry majors. (a) Mechanics, heat, and thermodynamics. Prerequisite: Mathematics 150 or concurrent enrollment. (b) Electricity, magnetism, and optics. Prerequisite: 205a. (c) Concepts in modern atomic, molecular, nuclear physics, quantum physics, and relativity. Prerequisite: 205a,b or consent of instructor.

253-2 (1,1) College Physics Laboratory. One two-hour laboratory per week. Prerequisite: completion of or concurrent enrollment in 203a,b respectively; if the corresponding lecture course is dropped, the laboratory course must also be dropped.

255-3 (1,1,1) University Physics Laboratory. One two-hour laboratory per week. Prerequisite: completion of or concurrent enrollment in 205a,b,c respectively; if the corresponding lecture course is dropped, the laboratory course must also be dropped.

301-3 Theoretical Methods in Physics. Introduction to theoretical methods of general usefulness in intermediate and advanced undergraduate physics, with particular emphasis on applications of vector algebra and calculus, complex numbers, matrices, ordinary differential equations and Fourier series to selected topics in physics. Required of all physics majors prior to or concurrently taking 310 or 320. Prerequisite: 205a, Mathematics 250 or consent of instructor.

302-3 Astronomy — Honors. Current knowledge of the universe and the gathering of that knowledge. Includes properties of the solar system and theories of its origin, the structure and evolution of stars. Supplemented by occasional hours of evening observation. Prerequisite: one of 203a, 204a, 205a, plus Mathematics 111, or consent of instructor.

310-3 Mechanics I. Motions of systems of particles and rigid bodies. Prerequisite: 301 or Mathematics 305 or concurrent enrollment.

320-3 Electricity and Magnetism I. The theory of electric and magnetic fields; electrostatic fields in vacuum and in material media, special methods for the solution of electrostatics problems, energy, and force relations in electrostatic fields; stationary electric fields in conducting media, electric currents, magnetic fields, magnetic properties of matter. Prerequisite: 301 or Mathematics 305 or concurrent enrollment.

324-3 Analog Electronics for the Scientist. Coordinated two-hour lecture and two-hour laboratory study in analog electronics. Emphasis is on overall modern electronics and its applications in the experimental research laboratory setting. Topics include DC and AC circuit theory, transducers and measurement techniques, semiconductor active devices, operational amplifiers and feedback, signal recovery and processing techniques, and noise reduction. Prerequisite: 203b or 205b and Mathematics 111.

328-2 Light. Light propagation, reflection, refraction, interference, diffraction, polarization, and optical instruments. Prerequisite: 203 or 205.

345-3 Thermodynamics and Statistical Physics. Thermal behavior of macroscopic matter, the laws of thermodynamics; basis for thermodynamics in statistical mechanics; basic methods and applications of classical and quantum statistical mechanics. Elementary kinetic theory of matter. Prerequisite: 301, Mathematics 251.

410-3 Mechanics II. Gravitation, continuous media, transformation properties, Lagrangian and Hamiltonian formalisms. Prerequisite: 310 or consent of instructor.

420-3 Electricity and Magnetism II. Induced electromotive force, quasisteady currents and fields, Maxwell's equations, electromagnetic waves and radiation, with applications. Prerequisite: 320 or consent of instructor.

424-3 Digital Electronics for the Scientist. Coordinated two-hour lecture and two-hour laboratory study of digital electronics, microprocessors and minicomputers with emphasis on their application to the experimental research laboratory setting. Topics include Boolean algebra, basic digital techniques, large scale integration devices, analog to/from digital conversion, microprocessors and minicomputers, and data acquisition. Prerequisite: 324 or consent of instructor.

425-3 Solid State Physics I. Structure of a crystalline solid; lattice vibrations and thermal properties; electrons in metals; band theory; electrons and holes in semiconductors; opto-electronic phenomena in solids; dielectric and magnetic properties; superconductivity. Prerequisite: 310, 320, 345, and 430 or consent of instructor.

428-3 Modern Optics and Lasers. Properties of electromagnetic waves in space and media, polarization and interference phenomena and devices, electro- and magneto-optic effects, optical gain, and lasers. Prerequisite: 420 or consent of instructor.

430-3 Quantum Mechanics I. An introduction to quantum mechanics including its experimental basis and application in atomic physics. Prerequisite: 205c, 310 and 320. Prior or concurrent enrollment in 410 and 420 is desirable.

431-3 Atomic and Molecular Physics I. Atomic spectra and structure; molecular spectra and structure. Prerequisite: 430 or consent of instructor.

432-3 Nuclear Physics I. Basic nuclear properties and structure; radioactivity, nuclear excitation, and reactions, nuclear forces; fission and fusion. Prerequisite: 430 or consent of instructor.

445-3 Statistical Mechanics I. An introductory course in the principles and applications of classical and quantum statistical mechanics, and the elementary kinetic theory of matter. Prerequisite: 345.

450-1 Modern Physics Laboratory. Introduces students to experimental research and encourages them to develop and carry out experiments. Prerequisite: 205c or consent of instructor.

458-2 Laser and Optical Physics Laboratory. Properties of laser beams and resonators, fluorescence and two photon spectroscopy, diffraction, Fourier transformation and frequency filtering, electro- and magneto-optic modulation, fiber propagation and related experiments. Prerequisite: 428 or consent of instructor.

470-1 to 3 Special Projects. Each student chooses or is assigned a definite investigative project or topic. Prerequisite: 310, 320 or consent of instructor.

Physiology (PHSL)

201-3 Human Physiology. (University Core Curriculum) A course which relates the normal function of the human body to the disruptions which occur in a variety of disease states. Three lecture hours per week. Not open to students who have taken 310.

208-1 Laboratory Experiences in Physiology. Laboratory course to be taken concurrently with 209. Provides experiences with small animal experimentation and measurements made on the human subject. One two-hour laboratory per week. Prerequisite: concurrent enrollment in 201.

220-3 Human Musculoskeletal Anatomy. Lectures, demonstrations, and observations of the prosected body. Course primarily for students of physical education, with emphasis on musculoskeletal and nervous systems. Three lecture hours per week. Not open to students who have taken 301.

257-1 to 6 Concurrent Work Experience. Under exceptional circumstances, and with prior approval of the departmental chair, credit may be granted for practical experience or other work directly related to physiology. Mandatory Pass/Fail.

258-1 to 6 Previous Work Experience. Under exceptional circumstances, and after petition to the departmental chair, credit may be granted for practical experience or other work directly related to physiology. Mandatory Pass/Fail.

259-2 to 8 Occupational Education Credit. Under special circumstances, advanced training in a paramedical or other field directly related to physiology can be used as a basis for granting credit in physiology. Such credit is sought by petition to the chair of the department and requires approval of the dean of the College of Science.

301-4 Survey of Human Anatomy. Lectures, demonstrations, and observations of the prosected body, plus experiences in the anatomy laboratory. Course is designed for students in nursing, mortuary science, biological science, and related disciplines. Three lecture hours and one two-hour laboratory per week. Not open to students who have taken 220.

310-5 Principles of Physiology. Beginning course in human physiology designed for majors in physiology and other biological sciences, and recommended to premedical and other students considering biological sciences and health professions. Three lectures per week, one hour discussion and one two-hour laboratory. Prerequisite: one year of biological science and a reasonable knowledge of chemistry.

320-3 Reproduction and Sexuality. Comprehensive course examining the physiological basis of mammalian reproduction and the behavioral aspects of sexuality. Human sexuality and reproductive function is the primary focus. Topics include hormonal control, anatomy, ovulation, sexual response and behavior, fertilization, pregnancy and parturition. Human specific topics include reproductive medicine, STDs, paraphilias, birth control and infertility. Prerequisite: one year of biology or permission of instructor.

400-6 (3,3) Concepts in Anatomy. A detailed survey of human anatomy for preprofessional students with an interest in the biomedical disciplines, including radiographic, cross-sectional, and developmental anatomy. Three lectures per week. Should be taken in a,b sequence. Prerequisite: 301 and senior standing or consent of instructor.

401-6 (3,3) Advanced Human Anatomy Laboratory. Laboratory dissection of the human body (six hours per week). Primarily for students majoring in physiology or other biological sciences, anthropology, etc. Prerequisite: 400 or concurrent enrollment.

410-10 (5,5) Mammalian Physiology. Physical and chemical organization and function in mammals, with emphasis on the human. Physiology of blood and circulation, respiration, digestion, metabolism, excretion, endocrines, sensory organs, nervous system, muscle and reproduction. Primary course for all students majoring in physiology or related sciences. Four lectures and one three-hour laboratory session per week. May be taken in any sequence. Prerequisite: college level chemistry and physics and at least junior standing.

420-6 (3,3) Principles of Pharmacology. (a) Covers absorption, distribution, and metabolism of drugs and the action of certain drug classes on the living organism. Classes of drugs to be discussed include drugs affecting the autonomic nervous system, drugs used to treat neurological and psychiatric disorders, local anesthetics, neuromuscular blocking agents, and analgesics. Two lectures per week and one two-hour laboratory. Prerequisite: 310 or 410; 410 may be taken concurrently; organic chemistry. Some knowledge of biochemistry is needed. (b) Involves a discussion of the physiological and biochemical action of various classes of drugs. Classes of drugs to be discussed include general anesthetics, antihistaminics, diuretics, antibiotics, drugs used to treat cardiovascular disorders, and drugs affecting the endocrine system. Prerequisite: 420a; 310 or 410; organic chemistry.

430-6 (3,3) Cellular Physiology. Examination of the chemical physical characteristics of eukaryotic cells and how they regulate cell function. Cellular physiology integrates studies of gene expression, protein function, organelle structure and cell differentiation for a more complete understanding of the role of the cell in tissue, organ and whole animal function. Prerequisite: organic chemistry or biological chemistry.

433-6 (3,3) Comparative Physiology. Variations of physiological processes in animal phyla, and comparison of these with human physiology. (a) Osmotic and ionic regulation; digestion, nutrition, and metabolism; excretion; respiration; defense and resistance. (b) Muscles and movement; circulation; nervous systems and sensory information; coverings and support; endocrine regulation; reproduction. Three lectures per week. Prerequisite: one year of biological science.

440-6 (3,3) Biophysics. (a) Biomathematics, biomechanics and biotransport. (b) Bioelectrics and bio-optics applied to physiological problems. Three lectures per week. Prerequisite: Mathematics 141 or equivalent; one year of college biological science including Physiology 310 or its equivalent; one year of college physics. May be taken in b,a sequence with consent of instructor.

460-2 Electron Microscopy. Lecture course designed to introduce the student to the theory and principles of electron microscopy. Two lecture hours per week. Prerequisite: senior standing or permission of instructor.

462-3 Biomedical Instrumentation. (Same as Electrical Engineering 462.) Diagnostic and therapeutic modalities related to engineering. Cardiovascular, neural, sensory and respiratory instrumentation. Prerequisite: consent of instructor.

470-3 Biological Clocks. Study of the temporal aspects of diverse physiological and behavioral functions which possess diurnal and seasonal periodicity. Species covered will include many eukaryotic organisms including plants, but will mainly stress mammals. Oscillations in sleep-wake cycle, locomotion, reproduction, hormonal secretion and numerous other processes will be explored. In addition, the effects of biological clocks in humans and the effect of jet lag and depression will be examined. Prerequisite: 310.

491-3 to 8 Independent Research for Honors. Supervised readings and laboratory research in physiology directed by a member of the physiology faculty. Undergraduate honors students only. By special arrangement with the instructor in the physiology department with whom the student wishes to work.

492-1 to 8 Special Problems in Physiology. Supervised readings and laboratory research in physiology directed by a member of the physiology faculty. Open to undergraduate students only. By special arrangement with the instructor in the physiology department with whom the student wishes to work. No more than 3 hours may be counted as electives towards the major in physiology.

Plant and Soil Science (PLSS)

200-3 Introduction to Crop Science. Production of important field crops of the world with greatest emphasis on U.S. and midwestern field crops; crop production changes and adjustments, crop distribution over U.S., and crop groups and classifications, special agronomic problems, crop enemies, crop ecology, fertilizer and liming practices, tillage, crop improvement through breeding. Field trip (no cost).

220-3 General Horticulture. General principles of plant propagation, vegetable growing, fruit growing, landscape gardening, and floriculture. Seniors cannot enroll without consent of instructor. Prerequisite: Plant Biology 200 or equivalent.

225-2 Genetics for the Amateur Gardener. An introduction to the essential principles of genetics and plant hybridization utilizing common garden and house plants.

228-2 Floral Arrangements. Theory and practice in the art of flower and plant arrangement for the home, show, and special occasions. History, elements, and principles of design and use of color. Laboratory fee approximately \$25.

238-2 Home Gardening. Vegetable gardening techniques for the home gardener. Both inorganic and organic methods are used together with the latest recommended varieties for the small garden.

240-4 Soil Science. Basic and applied chemical, physical, and biological concepts in soils. The origin, classification and distribution of soils and their relationship to humans and plant growth. Prerequisite: Chemistry 140b or equivalent; geology suggested.

257-1 to 10 Work Experience. Credit for on-campus work experience in the areas of plant and soil science, or credit through a cooperative program developed between the department and the Office of Student Work and Financial Assistance. Credit awarded based on 4 hours of work per week during the semester for each hour of credit. Prerequisite: consent of instructor. Mandatory Pass/Fail.

300-5 (2,3) Field Crop Production. Principles of growth and production of field crops and their utilization. (a) Primarily corn and soybeans. (b) Small grains, primarily wheat and grain sorghum, with laboratory demonstrating principles discussed in both a and b including research projects, and grading and utilization of grain. Laboratory field trips, approximately \$5. Prerequisite: an introductory crops course or consent of instructor.

305-4 Plant Genetics. Principles of genetics and evolution of plants, elementary plant breeding, and the interaction between plant breeding and industry. Prerequisite: a course in biology or plant biology.

322-3 Turfgrass Management. Principles and methods of establishing and maintaining turfgrass for lawns, recreational areas, and public grounds. Identification of basic plant and soil materials and management of turfgrasses in variable environments. Prerequisite: a biology course.

325-3 Garden Flowers. Culture, identification, and use of flowering bulbs, annuals, biennials, and perennials in the home flower garden. Prerequisite: an introductory course in biology or consent of instructor.

327-3 Landscape Plant Materials. Identification, usage and adaptability to the landscape of woody (deciduous and evergreen) and ornamental shrubs, trees and vines. Use of plant keys. Laboratory fee \$10. Prerequisite: an introductory botany course or consent of instructor.

328A-2 Appreciation of Landscape Design. Introduction to theory and principles of landscape design as applied to the modern home. Property selection and climate control. Prerequisite: 327 and Agriculture Education and Mechanization 371 and 374 or equivalent.

328B-2 Appreciation of Landscape Design - Laboratory. Practical application in modern methods of property planning including the individual components of the completed landscape plan and selection of plants. Laboratory fee: \$20. Prerequisite: 327 and Agriculture Education and Mechanization 371 and 374 or equivalent.

333-3 Vines and Wines. Introduction to grape growing; making, using and appreciation of wine for pleasure, health and profit. Discovering both the science and art of growing, making and using wine. Practical, hands-on approach with emphasis placed on preparing the novice to begin a successful journey through the wonderful world of grapes and wines. A minimum of two field trips (on Saturday) required. Offered fall semester only.

356-4 Plant Pathology. (Same as Plant Biology 356.) A study of the nature and control of plant diseases. Fungal and bacterial diseases are stressed. Field crop diseases are emphasized. Two lectures and two laboratories per week. Prerequisite: Plant Biology 200 or equivalent; Plant Biology 320 recommended.

359-1 to 6 Intern Program. Supervised work experience program in either an agricultural agency of the government or agri-business. Prerequisite: junior standing and approval of department. Mandatory Pass/Fail.

370-3 Agroecology-Sustainable Agricultural Systems. An introduction to the biotic, natural resource, environmental, social and economic implications and requirements of sustainable agriculture. Prerequisite: an introductory course in plants, animals, soils, or biology or consent of the instructor.

380-4 (2,1,1) Plant and Soil Evaluations. (a) Grain grading to include crop and weed identification and seed identification and analysis. (b) Comparative evaluation and judging of horticultural crops to include flowers, fruits, vegetables, woody ornamentals. Field trip costing approximately \$25. (c) Soil evaluation to include identification of genetic horizons, their physical characteristics and classification. Field trips (no cost). These courses are not required for participation in SIU judging team activities.

381-1 to 2 (1,1) Plant and Soil Science Seminar. Discussion of special topics and/or problems in the various areas of plant and soil science. Prerequisite: Speech Communication 101 and junior standing.

390-1 to 4 Special Studies in Plant and Soil Science. Assignments involving research and individual problems. Prerequisite: consent of department chair.

391-1 to 4 Honors in Plant and Soil Science. Independent undergraduate research sufficiently important to three hours per week of productive effort for each credit hour. Prerequisite: junior standing, gpa of 3.0 with a 3.25 in the major, and consent of department chair.

400-2 Trends in Agronomy. A discussion session format will be employed as a means of acquainting students with recent literature and allowing them to remain current with latest developments in their area of specialty. Prerequisite: senior standing.

405-3 Plant Breeding. Principles of plant breeding emphasized together with their application to the practical breeding of agronomic, horticultural, and forest plants. Field trip costs approximately \$10. Prerequisite: 305 or equivalent.

408-3 World Crop Production Problems. Ecological and physiological factors influencing production in various areas of the world. Natural limitations on world crop production. Non-agricultural factors influence world crop output. Prerequisite: 200.

409-3 Crop Physiology and Ecology. The effects and significance of physiological and ecological parameters on crop yields. Prerequisite: Plant Biology 320 or consent of instructor.

419-3 Forage Crop Management. Forage crop production and utilization; forage crop characteristics, breeding, and ecology; grasslands as related to animal production, soil conservation, crop rotation, and land use. Field trip costs approximately \$5.00. Prerequisite: Plant Biology 200 or one course in biology or equivalent.

420-4 Crop Pest Control. Study of field pests of forest, orchard, field, and garden crops; pest control principles and methods; control strategy; and consequences of pest control operations. Prerequisite: introductory biology or crop science course and/or consent of department.

422-3 Turfgrass Science. Basic concepts of physiology, growth, and nutrition of turfgrasses and their culture. Application of turfgrass science to management of special turf areas such as golf courses, athletic fields, and sod farms; and to the turfgrass industry. Field trips cost approximately \$15. Prerequisite: 240 and 322 or equivalent or consent of instructor.

423-3 Greenhouse Management. Principles of greenhouse management controlling environmental factors influencing plant growth; greenhouses and related structures; and greenhouse heating and cooling systems. Field trips costing approximately \$5. Prerequisite: 220 or consent of instructor.

424-4 Floriculture. Production, timing, and marketing of the major floricultural crops grown in the commercial greenhouse. Each student will have an assigned project. Field trip costing approximately \$25. Prerequisite: 423 or consent of instructor.

425A-5 Advanced Plant Physiology. (Same as Plant Biology 425a.) Intermediary plant metabolism. Characterization of the photosynthetic and metabolic pathways of biosynthesis and degradation of organic constituents; role of environmental regulants of plant metabolism. Prerequisite: Plant Biology 320 or consent of instructor.

428-3 Advanced Landscape Design I. Development of the design process, graphics and verbal communication of landscape projects. Emphasis on large scale projects and residential design. Laboratory fee: \$25. Prerequisite: 328-4 or consent of instructor.

429-3 Advanced Landscape Design II. Development of the design process, graphics and verbal communication of landscape projects. Emphasis on construction details, color rendering and portfolio development. Laboratory fee: \$25. Prerequisite: 328-4 or consent of instructor.

430-4 Plant Propagation. Fundamental principles of asexual and sexual propagation of horticultural plants. Actual work with seeds, cuttings, grafts, and other methods of propagation. Field trip costing approximately \$5. Laboratory fee: \$40.00. Prerequisite: 220.

432-4 Nursery Management. Principles and practices involved in the propagation, production, and marketing of ornamental landscape plant materials. Emphasis on plant production with field trips to various production areas costing approximately \$40. Prerequisite: 220 and 327a, or consent of instructor.

433-4 Introduction to Agricultural Biotechnology. (Same as Animal Science 433.) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer and expression will be derived. Prerequisite: senior standing or consent of instructor.

434-3 Woody Plant Maintenance. Care and management of ornamental shrubs and trees commonly used in the landscape. Topics to include trimming, pruning, fertilization, transplanting, and diagnosis of woody plant problems. Prerequisite: 327 or Forestry 202 or consent of instructor.

435-1 to 4 Agricultural Molecular Biotechnology Seminar. Molecular biology is rapidly making important contributions to agricultural science through biotechnology. An appreciation of the techniques of molecular biology and their application to plant improvement is important to all in agriculture and biology. The relationships between plant molecular biology and the biotechnology industry will be discussed. Presentations on particular research problems will be made. Graded S/U.

436-4 Fruit Production. Deciduous tree and small fruit growing, physiology, management practices, marketing. Prerequisite: 220 or consent of instructor.

437-4 Vegetable Production. Culture, harvesting, and marketing of vegetables; with morphological and physiological factors as they influence the crops. Field trip costing approximately \$5. Prerequisite: 220 or consent of department.

441-3 Soil Morphology and Classification. Development, characteristics, and identification of soils, study of profiles; and interpretation and utilization of soil survey information in land use planning. Field trip costing approximately \$5. Prerequisite: 240 or consent of instructor.

442-3 Soil Physics. A study of the physical properties of soils with special emphasis on soil and water relationships, soil productivity, and methods of physical analysis. Prerequisite: 240.

443-3 Soil Management. The soil as a substrate for plant growth. Properties of the soil important in supplying the necessary mineral nutrients, water and oxygen and for providing an environment conducive to plant root

system elaboration. Soil management techniques that are important in optimizing plant growth. Prerequisite: 240.

445-3 Irrigation Principles and Practices. This course will cover basic principles of irrigation sciences; water requirements of crops; soil water relationship; water application methods including flooding, sprinkler, and drip (or trickle) systems; water conveyance, distribution and measurement; evaluation of irrigation efficiency; and irrigation scheduling. Considerations will also include crop production effects and economic aspects of irrigation. Prerequisite: 240 or consent of instructor.

446-3 Soil and Water Conservation. Covers the principles of hydrologic processes and soil erosion. Consideration will be given to the occurrence of soil erosion as it affects humans, food production, and the environment. The methods and technologies for protecting against and controlling of erosion will also be discussed. Prerequisite: 240 and University Core Curriculum Mathematics or consent of instructor.

447-3 Fertilizers and Soil Fertility. Recent trends in fertilizer use and the implications of soil fertility build up to sufficiency and/or toxicity levels; the behavior of fertilizer material in soils and factors important in ultimate plant uptake of the nutrients; the plant-essential elements in soils and ways of assessing their needs and additions; tailoring fertilizer for different uses and management systems; implication of excessive fertilization in our environment. Prerequisite: 240, concurrent enrollment in 448 suggested.

448-2 Soil Fertility Evaluation. A laboratory course designed to acquaint one with practical soil testing and plant analysis methods useful in evaluating soil fertility and plant needs. One hour lecture, two hours laboratory. Prerequisite: 240; 447 or concurrent enrollment; or consent of instructor.

454-4 Soil Microbiology. (Same as Microbiology 454.) A study of microbial numbers, characteristics and biochemical activities of soil microorganisms with emphasis on transformations of organic compounds, nitrogen phosphorus, sulfur, iron, and other plant essential nutrients. Laboratory fee: \$15.00. Prerequisite: 240 or Microbiology 301.

468-3 Weeds — Their Control. Losses due to weeds, weed identification and distribution, methods of weed dissemination and reproduction, mechanical, biological, and chemical control of weeds. State and Federal legislation pertaining to weed control herbicides. Herbicide commercialization. Field trips costing approximately \$5. Prerequisite: an introductory biology course.

470-2 Post Harvest Handling of Horticultural Commodities. Fundamental principles of post harvest physiology, handling, and evaluation of horticultural commodities will be covered. Specific details will be given on vegetable, fruit, ornamental, and floricultural commodities. Field trip costing approximately \$30. Prerequisite: 220 and Plant Biology 320.

Plant Biology (PLB)

For all field courses in plant biology, students will be assessed a transportation fee. In addition, certain courses may require the purchase of additional materials and supplies, generally \$1 to \$5 in total cost.

115-3 General Biology. (University Core Curriculum, Same as Zoology 115) Introduction to fundamental biological concepts for non-life science majors interested in learning about interrelationships of human, plant and animal communities. Integrated lecture and laboratory cover topics that include structure and function of living systems, reproduction and inheritance, evolution, biological diversity and environmental biology. Laboratory applies scientific methods to the study of living systems.

117-3 Plants and Society. (University Core Curriculum) The relationship between plants and human society: historical and modern applications of plants to the human experience; centers of botanical origins and domestication of crop plants; theories on active plant and crop conservation; medicinal plants; making sound decisions on current and future problems of the environment; and plant genetics and biotechnology. Labs will include: hands-on experimentation; field work in natural plant communities, supermarkets and farmer's market; and visitations to plant research facilities. A field trip fee will be assessed.

200-4 General Plant Biology. An introduction to Plant Biology. Emphasis is placed on structure and development and associated physiological phenomena. Consideration also is given to basic aspects of plant genetics, classification, evolution, ecology, and conservation. Three lectures and one 2-hour laboratory per week.

204-4 Plant Diversity. An evolutionary approach to the study of major plant groups — algae to flowering plants. Emphasis will be placed on cytology, anatomy, and development. Economic and ecological aspects of various groups as they relate to humans will also be considered. Laboratory will stress principles via hands-on study of selected representatives. Three lectures and one 2-hour laboratory per week. Prerequisite: Biology 200b or consent of instructor.

301I-3 Environmental Issues in the Contemporary World. (University Core Curriculum) Fundamental biological and ecological processes important in the individual, population and community life of organisms integrating with the philosophical and ethical relationships of the contemporary, domestically diverse human society are examined. Emphasis is placed on a pragmatic understanding of environmental issues. Prerequisite: strongly recommend completion of core science requirements.

303I-3 Evolution and Society. (University Core Curriculum) An introduction to the basics of biological evolution and the effect of biological evolution on society. Historical and modern interpretations of biological evolution on the human experience will be developed. This will include legal, political, religious, scientific, racist, sexist, philosophical and educational aspects. Topics will be covered via discussions, presentations, papers and debates. Prerequisite: strongly recommend completion of core science requirement.

- 304-4 Elements of Plant Systematics.** The principles of plant classification including history, nomenclature, specimen collection and preservation, current systematic methodologies, and a survey of major plant families. Two lectures and four laboratory hours per week. Prerequisite: Biology 200b or equivalent.
- 320-4 Elements of Plant Physiology.** The functions of plants and their relation to the various organs. Two lectures and four laboratory hours per week. Every semester. Prerequisite: Biology 200b; organic chemistry or a minor in chemistry.
- 335-2 Methods in Genetics.** Selected organisms and techniques illustrating genetic principles. Two two-hour laboratories per week. Prerequisite: Biology 305 or equivalent.
- 337-2 Ecology Laboratory.** Techniques in vegetation analysis and environmental measurements. One four-hour laboratory per week. Prerequisite: Biology 307 or equivalent.
- 356-4 Plant Pathology.** (Same as Plant and Soil Science 356.) A study of the nature and control of plant diseases. Fungal and bacterial diseases are stressed. Field crop diseases are emphasized. Two lectures and two laboratories per week. Prerequisite: Biology 200b or equivalent; 320 recommended.
- 360-3 Introductory Biostatistics.** Introduction to basic statistical concepts and methods as applied to biological data. Includes descriptive techniques such as measures of central tendency, variability, hypothesis testing, analysis of variance, and simple linear regression. Computer analysis and report writing will be required.
- 390-1 to 3 Readings in Plant Biology.** Individually assigned readings in botanical literature. Every semester. Prerequisite: consent of departmental chair.
- 391-1 to 4 Special Problems in Plant Biology.** Individual laboratory or field work under supervised direction: (a) Anatomy, (b) Bryology, (c) Ecology, (d) Morphology, (e) Mycology, (f) Paleobotany, (g) Pathology, (h) Photography, (i) Phycology, (j) Physiology, (k) Systematics. Prerequisite: consent of departmental chair.
- 400-4 Plant Anatomy.** An introduction to cell division, development, and maturation of the structures of the vascular plants. Laboratory. Prerequisite: Biology 200b or consent of instructor.
- 404-4 The Algae.** A phylogenetic approach to the study of algae with emphasis on comparative cytology, morphology, and ecology. Laboratories include a detailed survey of freshwater algae and a general treatment of representative marine forms. Two lectures and two two-hour laboratories per week. Prerequisite: 204 or consent of instructor.
- 405-4 The Fungi.** A survey of the fungi — their structure, development, relationships, ecological roles, and economic importance. Two lectures and two laboratories. Prerequisite: 204 or equivalent.
- 406-3 Bryology.** Structure, development, and relationships of the liverworts, hornworts, and mosses. Two lectures and one laboratory per week. Prerequisite: 204 or equivalent.
- 409-3 Field Mycology.** The taxonomy, ecology, and distribution of fungi in southern Illinois and environs with emphasis on techniques of specimen collection, preservation, identification, and recognition. Prerequisite: Biology 200b; 204 recommended.
- 410-3 Taxonomy and Ecology of Bryophytes and Lichens.** Floristic studies of the moss, liverwort, hornwort, and lichen communities of southern Illinois. Prerequisite: Biology 200b or equivalent, or consent of instructor.
- 414-3 Paleobotany.** (Same as Geology 414) The study of external form, internal structure, and relationships of plant fossils. Two lectures and one laboratory per week. Prerequisite: 204; 400 recommended.
- 415-5 Morphology of Vascular Plants.** The study of external form, internal structure, and relationships of vascular plants. Three lectures and two laboratories per week. Prerequisite: 204. Recommended: 400.
- 416-3 Limnology.** (Same as Zoology 415.) Lakes and inland waters; the organisms living in them, and the factors affecting these organisms. Two lectures per week and one 4-hour laboratory alternate weeks. Offered fall term. Prerequisite: Zoology 220a.
- 421-4 Botanical Microtechnique.** Introduction to practical methods of preservation and preparation of plant materials for laboratory and microscopic study. Paraffin and plastic embedding and sectioning techniques, and use of general and histochemical stains stressed. Includes chromosome squashing, whole-mount preparation, photomicrography, and other techniques. One lecture and three laboratories per week. Prerequisite: Biology 200b or equivalent.
- 425A-5 Advanced Plant Physiology.** (Same as Plant and Soil Science 425a) Intermediary plant metabolism. Characterization of the photosynthetic and metabolic pathways of biosynthesis and degradation of organic constituents; role of environmental regulants of plant metabolism. Prerequisite: 320 and consent of instructor.
- 425B-5 Advanced Plant Physiology.** Physics of plants; membrane phenomena; water relations; mineral nutrition. Prerequisite: 320 and consent of instructor.
- 430-3 Economic Botany.** Classification, evolution, domestication, and botanical characteristics of plants useful to people. Every year. Prerequisite: Biology 200b or equivalent.
- 433-4 Introduction to Agricultural Biotechnology.** (See Plant and Soil Science 433). Prerequisite: senior standing or consent of instructor.
- 439-2 Natural Areas and Rare and Endangered Species.** Evaluation of the natural area preservation concept with emphasis on how to detect natural areas and methods to preserve them. Emphasis on the rare and endangered species program, its significance, and its methodology. Prerequisite: 304, Biology 307.
- 440-3 Grassland Ecology.** A study of grassland structure and function in relation to various biotic and abiotic factors. Cost of field trips (\$5) and textbooks must be incurred by the student. Prerequisite: 304 and Biology 307 or equivalent.
- 443-4 Forest Ecology and Reclamation.** Soil, climatic, and genetic factors affecting tree distribution and growth in disturbed and natural habitats. Saturday field trips. Prerequisite: 307 or equivalent.
- 444-4 Quantitative Plant Ecology.** Includes concepts and methods pertaining to the analysis of ecological data. Approaches will include quantitative methods for classifying, ordinating, and describing structure of communities. Laboratory will include the computer application of these concepts and methods to field situations. Prerequisite: 360, Biology 307 or consent of instructor.

445-4 Wetland Plant Ecology. Provides students with experience in wetland plant ecology with an emphasis on wetland functioning, field sampling, and identification of common wetland plants. Travel fee for field trips is \$10. Prerequisite: 304, Biology 200b, 307, or consent of instructor.

447-2 to 6 Field Studies in Latin America. Two to six weeks of intensive field work to acquaint students with the flora and vegetation in various environments of Latin America and with ecological and taxonomic field techniques. Cost varies with type of study and location. Transportation cost: \$80. Prerequisite: advanced standing in one of the biological sciences and consent of instructor.

448-3 to 8 Field Studies in the Western United States. Three to six weeks of intensive field work designed to acquaint students with the flora, vegetation, and environments of the Rocky Mountains and adjacent areas. Both ecological and taxonomic field methods are emphasized. Transportation cost (\$100), travel expenses, and textbooks must be incurred by the student. Prerequisite: 304, Biology 307 or equivalents, and consent of instructor.

449-4 Plant Systematics and Evolution. The principles of modern plant systematics including classification methods at different taxonomic levels, data analysis, speciation and isolating mechanisms, basic population genetics and the use of morphological, anatomical and molecular characters in assessing plant evolutionary relationships. Prerequisite: 304 or equivalent or consent of instructor.

450-2 Plant Geography. World distribution of plants related to environmental, floristic, and historical factors. Prerequisite: interest in biology.

451-4 Flora of Southern Illinois. Exposure to the major upland and lowland communities of southern Illinois with an emphasis on the identification, distribution and ecology of the natural and introduced floristic components. Prerequisite: 304 or consent of instructor.

456-2 Advanced Plant Pathology. A study of the changes occurring in host and pathogen at the host-parasite interface before, during, and after penetration. Control measures will be discussed and emphasis will be on midwest field crops. Two lectures per week. Prerequisite: 356 or consent of instructor.

475-3 Advanced Cell Biology. (Same as Zoology 475.) Cell structure at molecular and cytological levels. Includes discussions of research methods, plasma membrane, cell exterior and recognition, the endomembrane system and related organelles, self-replicating organelles, the cytoskeleton, nuclear structure and function in cell replication, cell differentiation and response, and eukaryotic cell evolution. Prerequisite: BIOL 306 or equivalent.

476-2 Advanced Cell Biology Laboratory. (Same as Zoology 476.) Laboratory course to accompany Plant Biology 475. Light and electron microscopy, cell culturing, biochemical methods, and experimental protocols are used to study the structure of cell membranes, intracellular organelles, including the Golgi apparatus, ER, mitochondria, plastids, lysosomes, the cytoskeleton, and nucleus. Prerequisite: 475 or concurrent enrollment.

485-2 Botanical Literature. A survey of the major classical and modern writings in the botanical sciences. This includes a consideration of the primary subdivisions; systematics, structure, physiology, genetics, and ecology. In addition, periodicals will be treated. Prerequisite: consent of instructor.

490-3 Photographic Methods in Scientific and Biological Photography. Black and white and color. Specimen photography, macrophotography. Slides for presentation, materials and methods used in scientific publications. Prerequisite: consent of instructor.

491-3 Scientific Illustration. Materials and methods used in illustrating scientific publications including two-dimensional graphs, maps, lettering, and line drawings. Three dimensional techniques will also be covered. Prerequisite: consent of instructor.

492-2 to 6 Honors in Plant Biology. Individual research problems available to qualified juniors and seniors. Prerequisite: consent of department chair.

Political Science (POLS)

The numbers preceding the following course titles have been designed to group courses by subject matter as well as level. A summary explaining the numbering system follows:

COURSE	LAST TWO DIGITS OF COURSE NUMBER
Scope, Methods, and Political Theory	00-09
American Politics	10-29
Public Law	30-39
Public Administration	40-49
Comparative Politics	50-69
International Relations	70-89
Miscellaneous	90-99

114-3 Introduction to American Government and Politics. (University Core Curriculum) Examines the structure of American national government, the cultural context, and the operation of our political system. Focuses on Constitutional foundations of American government, how differences in race, gender and culture affect the political system, and the American attempt to deal with equality, liberty and order, conflict and cooperation.

130-3 Law in American Society. This is an introductory course recommended for students who want to consider possible careers in law. The following topics will be covered: the relation between law, justice, morality and religion; types and sources of law and legal rules; origin and development of common law; the role of

lawyers, judges and juries; legal education in the United States. These topics will be explored through lectures, discussion groups and occasional guest speakers. Does not apply to hours in political science major.

200-3 Introduction to the Discipline of Political Science: Scope. Examination of the philosophy, methodology, theories, approaches and relevant generalizations of the study of politics and of the scope and subfields of political science. Not open to seniors without instructor's consent.

207-3 Contemporary Political Ideologies. A survey of recent political ideologies: Nationalism, Socialism, Communism, Liberal Democracy, Conservatism, Christian Socialism, Fascism, Contemporary Liberation Movements.

213-3 State and Local Government. Structure, functions, and decision-making processes of subnational governments in the United States. Prerequisite: 114.

214-3 Illinois Government. The politics, structure, and function of state and local governments in Illinois with stress upon the historical development of the political culture, current issues and events in the light of the historical background, and the interrelationship of politics, structure, and policy. Prerequisite: 213 or sophomore standing.

250-3 Politics of Foreign Nations. An introduction to the range of developed and developing nations with special attention to the importance of geographical, racial, ideological, ethnic and socioeconomic explanations of political institutions, processes and behavior in these states.

270-3 Introduction to International Relations. A study of world politics. The cause of international conflict and conditions of peace.

278-3 Domestic Sources of American Foreign Policy. (University Core Curriculum) A general survey of the American foreign policy process. Special attention is given to the diversity of ethnic, racial and religious groups in the US and how these groups attempt to shape foreign policies in ways that meet their specific domestic and international interests.

300-3 Introduction to the Discipline of Political Science: Methods. An examination of the research methods and data analysis techniques used by political scientists in their analysis of political questions and problems. Prerequisite: 114, 200 recommended.

303-3 Introduction to Political Theory. An introduction to the fundamental questions that are at the core of political theory. Attention is given in particular to the problem of justice and, when appropriate, to its meaning within the American context.

317-3 Public Opinion and Electoral Behavior. The nature and function of public opinion as it is related to electoral behavior. Additional sociological and psychological bases of voting behavior will be studied. Prerequisite: None; 200 recommended.

318-3 Political Campaigns and Elections. (Same as Speech Communication 358.) Analysis of modern political campaigns and the role they play in a democracy. Emphasis will be on recent developments in the planning and execution of campaigns by mass media and communication specialists and the role of the political parties and the public opinion polls in this process. Prerequisite: 114.

319-3 Political Parties. Nature, structure, and functions of political parties, with particular attention to the roles and activities of political parties in the United States. Attention also given to voting behavior and elections. Prerequisite: 114.

321-3 The Legislative Process. A comparative analysis of legislatures and legislative behavior. Emphasis is on the United States Congress. Prerequisite: 114.

322-3 American Chief Executive. The origin and background of the presidency and the governorship, qualifications, nomination and election, succession and removal, the organization of the executive branch, and the powers and functions of the president and governor. Prerequisite: 114.

324-3 Politics and Public Policy. The public policy-making process in the United States evaluated and a wide range of public policy programs analyzed. Prerequisite: 114.

325-3 Politics and Environmental Policy. An analysis of political aspects of the environment. Topics include conceptions of the environment in Western political thought; identification of environmental problems at the local, state, national and global levels; analysis of the various organized interests involved in formulating environmental policy; analysis of the response of local, state and national governments, including the response of the international community, to environmental problems and the activities of organized interests; and investigation of the various local, state, national and international policies that relate to the environment. Prerequisite: 114 or equivalent.

330-3 Introduction to the Legal Process. Designed to provide a basic background in the United States legal process for students who want only an overview of the process or who plan to take an extensive number of additional courses in the judicial area. The course will survey the history of common law, legal reasoning, basic terminology, conventional legal research, the legal profession, and provide an introduction to civil and criminal processes. Prerequisite: 114.

332-3 Introduction to Civil Liberties and Civil Rights. (Same as Black American Studies 345.) Course focuses on civil rights (e.g. voting, housing, employment, education) in terms of congressional statutes, the judicial rulings which led up to them, the administrative development and judicial interpretation of the statutes. Prerequisite: 114 recommended. Not recommended for students planning to take 433b.

334-3 Criminal Justice in Society and Court Management. Designed to provide the student with an in-depth look at the organization and management of federal, state, and local criminal courts. Focuses on the criminal process and the rights of defendants as they are processed by the system. Prerequisite: 114 recommended.

340-3 Introduction to Public Administration. An introduction to the study of public bureaucracy. Theoretical, political, and practical issues of organization, staffing, financing, and other matters are surveyed. United States administration and organizational behavior are stressed. Prerequisite: 114.

353-3 Comparative Communist and Post Communist Systems. General introduction to the political systems of communist states and states that have evolved from origins in communist party rule. Attention given to the role of ideology, the party, reform, democratization, and change in decision-making structures and processes.

366-3 Introduction to Latin American Government and Politics. A general introduction to Latin American government as the institutionalized political expression of Latin American civilization and culture. Does not require a reading knowledge of Spanish or Portuguese.

371-3 International Political Economy. Political dynamics of international trade, finance, investment, multinational corporations, energy, development, world wealth distribution, technology transfers. Politics of economic relations between East and West, rich and poor. Assumes that the political system shapes the economic system, that political concerns often shape economic policy, and that international economic relations are political relations. Prerequisite: none; 270 or economics course recommended.

373-3 International and Transnational Organizations. The growth and role of international organizations, with special attention to the political effects of military, economic and ecological interdependence. The United Nations, regional organizations, and non-governmental organizations. The effects of these organizations on international peace and justice. Prerequisite: none; 270 recommended.

378-3 Introduction to American Foreign Policy. An investigation of the means by which American foreign policy is formulated and executed and an analysis of the most significant challenges confronting America abroad.

390-1 to 3 Readings in Political Science. Specialized and advanced readings in areas not covered in other political science courses. Student must choose a faculty member to direct reading. Restricted Class Card, necessary for registration, must be signed by professor supervising readings and the student's political science advisor who files proper form with the director of undergraduate studies in the department. Fifteen hundred pages of reading per credit hour, or equivalent, is recommended. Students generally will be expected to have a 3.0 Political Science grade point average, a minimum of 21 hours already earned in the major or completed the introductory course and six additional hours in the subfield of the proposal readings. Prerequisite: authorization card signed by instructor and advisor prior to registration.

395-1 to 12 Internship in Public Affairs. Supervised field work in the office of a governmental agency, political party, interest group, legal agency, or other public affairs-oriented organization. A faculty-supervised paper is required in which the student relates the academic and internship experiences. Students must choose a faculty member to direct internship and obtain consent prior to registration. Name of faculty member must be filed with undergraduate adviser of the department at registration. Political Science 395 is open only to students who are confirmed Political Science majors or minors. Students must have taken at least two courses in the department with a minimum grade point average of 2.5 in these courses. No more than six hours may be counted toward a departmental major. A written description identifying the specific organization, the projected tasks, and responsibilities of the intern should be prepared prior to meeting with the faculty sponsor.

403-4 Philosophy of Politics. (See Philosophy 441.)

404-3 History of Political Theory. Shall survey different theorists and perspectives which have contributed significantly to the development of the ongoing tradition of political theory up to modern times. Prerequisite: 303 or consent of instructor.

405-3 Democratic Theory. An examination of various species and aspects of democratic thought, including the liberal tradition and its impact upon the United States. Prerequisite: 114 or consent of instructor.

408-3 Contemporary Political Theory. Shall explore the theorists and perspectives which have contributed to contemporary views of the political world. Prerequisite: 303 or consent of instructor.

413-3 Contemporary Intergovernmental Relations. An examination of relationships among national, state, and local governments in the American federal system, with emphasis on recent literature and contemporary issues. Special attention is given to fiscal relations, and specific intergovernmental programs in areas such as housing and environmental quality are examined. Prerequisite: 114.

414-3 Political Systems of the American States. The state level of government viewed with emphasis upon recent developments and current research. Prerequisite: 213.

415-3 Urban Politics. An examination of the environment, institutions, processes, and functions of government in an urban society with particular emphasis on current problems of social control and the provision of services in the cities of the U.S. Prerequisite: 213.

416-3 Senior Seminar in Politics. Seminar for advanced undergraduate students to examine in depth a wide variety of topics; to be taught by different instructors. Available for use as the honors seminar. Graduate students not admitted. Prerequisite: 200 recommended.

418-3 Political Communications. (See Speech Communication 451.)

419-4 Political Sociology. (See Sociology 475.)

420-3 Interest Group Politics. An examination of the structure, mobilization and impact of interest groups on American political life. The course objectives are to study various normative critiques of American pluralism and examine the political influence of contemporary interest groups, such as labor, racial and women's organizations. Prerequisite: 114.

433-6 (3,3) Constitutional Law. (a) This, the initial course in a two-course sequence, is concerned with the basic structure and power relationships in the American constitutional system. Topics include judicial review, judicial restraint, separation of powers, the federal system, national powers, state powers, the contract clause, and substantive due process. Prerequisite: 114. Political Science 330 recommended. (b) This, the second course in the constitutional law sequence concentrates on those provisions of the U.S. Constitution which protect individual rights and liberties against government encroachment. Prerequisite: 114.

435-3 Judicial Process and Behavior. An examination of the process by which judges in both trial and appellate courts at federal and state levels are selected and of the ways in which they make decisions. Attention to

the structure of the courts. Study of the communication and impact of judicial decisions. The course will provide some insight into the methods used to study judicial behavior.

436-3 Administrative Law. The procedural law of public agencies, particularly the regulatory commissions but also executive branch agencies exercising regulatory functions. The exercise of discretion and its control through internal mechanisms and judicial review. Prerequisite: 340 or 114 recommended.

437-3 Jurisprudence (Theories of Law). Major schools in legal thinking. Positive law and natural law. Idea of justice and concept of natural rights.

441-3 Administration of Bureaucratic Organizations. A study of the elements of bureaucratic organization and of problems and procedures in administration of complex public agencies. Emphasis is placed on the personnel aspects of public bureaucracy, including the history and structure of civil service systems, conditions of public service employment, and issues in leadership and supervision. Prerequisite: 340 or consent of instructor.

443-3 Public Financial Administration. An examination of governmental revenues and expenditures, with emphasis on state and local governments. Special attention is given to patterns of taxation and expenditure, intergovernmental fiscal relations, municipal debt, and administrative decision making. Prerequisite: 213 recommended.

444-3 Policy Analysis. An examination of basic concepts in the policy sciences, approaches to policy analysis, applications to selected areas of policy, and instruments of policy development.

445-4 Administration of Environmental Quality and Natural Resources. (Same as Geography 426.) An examination of institutional arrangement and administrative practices in the protection and use of land, water, air, and mineral resources. The course include analysis of responsibility and decision-making at all levels of government (federal, state, and local) as well as corporate, interest group, and individual responses to public programs. Particular attention will be given to administration of federal environmental quality legislation including the National Environmental Policy Act, the Clean Air Act, the Water Pollution Control Act, and the Surface Mining Reclamation Act.

446-3 Museum Administration. A comprehensive introduction to museum administration and management, including fiscal and budget oversight; an understanding of museum ethics; acquisition, conservation, and exhibition planning; personnel matters; and museum research. Museum practicum and research stressed.

447-4 to 5 (3, 1 or 2) Urban Planning. (See Geography 470a,b.)

457-3 Government and Politics of the United Kingdom and Canada. An examination of political institutions, behaviors, interest groups, parties and public policies of The United Kingdom (of Great Britain and Northern Ireland) and of Canada with particular reference to domestic and foreign policy. Prerequisite: 250 recommended.

458-3 Contemporary Europe. Comparative study of contemporary political systems and policy issues. Emphasis on selected countries and common problems facing governments. Topics covered include the European community, security institutions, economic, social and other public policies, and study of various governing processes.

459-3 Government and Politics of Russia. Transitions from communism in the former Soviet Union. Prerequisite: none. 250 recommended.

461-3 Governments and Politics of Southeast Asia. Politics and governments of Burma, Thailand, Malaysia, Vietnam, Cambodia, Laos, Singapore, Indonesia, and the Philippines. Prerequisite: none. 250 recommended.

462-3 Governments and Politics of Vietnam. Origins of revolution. The war for national reunification. Impact of American involvement. Contemporary problems of consolidation and development under communist rule. Implications for regional security. Prerequisite: 250 recommended.

463-3 Government and Politics of China. Internal political, economic, and social development of China. Prerequisite: none. 250 recommended.

464-3 Governments and Politics in the Middle East. Internal and international politics of the Islamic states of the Middle East and North Africa and Israel. Prerequisite: none. 250 recommended.

465-3 Governments and Politics of Sub-Saharan Africa. (Same as Black American Studies 465.) An examination of the impact of western colonial rule on the societies and politics of Africa, the methods by which these colonial areas became sovereign states in the post-World War II era, the role of domestic political institutions, African political thought and behavior, and the development of foreign policies regarding relations with other African states, continental and international organizations, and non-African states. Prerequisite: none. 250 recommended.

466-3 Government and Politics of Latin America. An in-depth analysis of specific problem areas in Latin American political processes as well as comparative study of selected Latin American nation-states. Prerequisite: none. 366 recommended.

468-3 Comparative Civil-Military Politics. A comparative study of the growth of the relationship of the armed forces with the civilian sector of the body politic, the selection, training, and professionalism of the officer corps, the control of the armed forces by the executive and legislature, the growth of strategic doctrine, insurgency and counter-insurgency warfare, and the analysis of the role of the armed forces as a governing group in a large number of non-western states. Prerequisite: none. 250 recommended.

475-6 (3,3) International Law. (a) Rules and practices governing the nations in their relations in peace and war. Prerequisite: none. 270 recommended. **(b)** Investigation of special problems in international law. Prerequisite: 475a.

477-3 The Making of American Foreign Policy. An advanced course dealing with the formulation and administration of American foreign policy. Prerequisite: 378 for undergraduates.

480-3 International Politics. Definition and analysis of the concepts of spheres of hegemony, regionalism, integration, interdependence, and an evaluation of their application to contemporary international

politics. The course will stress the need for the continuing evaluation of the vague role of national power and influence within the framework of a changing world environment.

488-3 International Relations of the Western Hemisphere. Emphasis on the international behavior of Latin American nation-states and/or regions especially related to policy trends and historical and contemporary objectives of the U.S. Prerequisite: none. 270 recommended.

494-1 to 3, 1 to 3 Honors Research. (a) Directed research for senior honors students. political science honors students may register for these credits if they have met all the prerequisites described in the political science Handbook. A three person faculty committee will administer an oral examination upon completion of senior thesis. Not for graduate credit. (b) Available to students who have completed all prerequisites of the University Honors Program and receive approval of their project from a Political Science instructor. Not for graduate credit.

Psychology (PSYC)

102-3 Introduction to Psychology. (University Core Curriculum) An examination of the variables related to the origins and modifications of human behavior using the viewpoints and techniques of contemporary psychology. Purchase of syllabus from local vendor required.

211-4 Research Methods in Psychology. An introduction to the use of scientific methods in the study of behavior. Considerations of experimental design and methodology are integrated with the treatment of data analysis, interpretation of results and writing of a research report. Students will write a research proposal, conduct an experiment and write a report of the experiment. This course satisfies the CoLA Writing-Across-the-Curriculum requirement. Lecture and laboratory. Prerequisite: 102.

212-4 Field Research Methods in Psychology. An introduction to field and other quasiexperimental methods appropriate for use in settings in which the researcher can exercise minimal control and manipulation. Included are designs and analytical methods for exploring cause-effect relationships in naturalistic settings. Lecture and laboratory. Prerequisite: 211 or consent of instructor.

222-3 Effects of Recreational Drugs on Mind and Body. Describes the physiological and psychological effects of substances used as recreational drugs for their psychoactive effects. Drugs discussed will include alcohol, amphetamines, cocaine and other stimulants, the barbiturates, methaqualone, the psychedelics, marijuana, tranquilizers, and the opiates. The purpose of the course is to provide the student with the facts concerning the effects of these drugs and the potential for their abuse and physiological and psychological dependence on them.

301-3 Child Psychology. The biological and psychological development of the child from birth through puberty, and relevant research methods and results. Prerequisite: 102.

302-3 Psychobiology. A survey of the role of biological processes in the behavior of humans and other species. Topics include structure and function of the nervous system, behavioral endocrinology, psychopharmacology, sensorimotor functions, sleep and waking, motivation and emotion, reinforcement, psychopathology, and learning and memory.

303-3 Adolescence and Young Adulthood. Examines interrelated psychological, biological and social aspects of development during adolescence and young adulthood based on a life-span perspective of development. Prerequisite: 102.

304-3 Adulthood and Aging. Examines the interrelated psychological, biological, and social aspects of development during middle and later adulthood based on a life-span perspective of development. Neuropsychological changes associated with normal and pathological aging will also be considered. Prerequisite: 102.

305-3 Psychology of Personality. The inferred patterns underlying an individual's unique reactions to the environment. Investigates the motivation, development, and methods of changing these patterns, and how personality processes are studied. Prerequisite: 102.

307-3 Social Psychology. Surveys contemporary issues such as love and friendship, shyness and loneliness, sexual attitudes and behavior, management of impressions made on others, attitude change and persuasion, leadership, group processes, aggression, and helping behavior. Prerequisite: 102.

308-3 Psychology of Motivation. Examines variables affecting motivation in animals and humans. Topics include motivation based on cultural processes as well as those based on biological needs. Prerequisite: 102.

309-3 Psychology of Learning. Principles and laws of learning as derived from the classical and instrumental learning literature — acquisition, extinction, punishment, persistence, generalization, discrimination, motivation, drives, and incentives. Prerequisite: 211.

310-3 Cognitive Psychology. A survey of theory and research on attention, memory, language behavior, and problem solving. The principal orientation will be the information processing approach to the study of behavior. Prerequisite: 102.

320-3 Industrial and Organizational Psychology. Introduction to industrial and organizational psychology. Emphasis is on psychological methods and psychological factors in the analysis and design of jobs and the work environment, and on the training, motivation, and evaluation of performance in the work setting. Prerequisite: 102.

322-3 Personnel Psychology. Examines the methods of psychology used in the selection, placement, and evaluation of employees. Government regulations requiring equal opportunity, psychological measurement concepts, and employee performance evaluation in the work environment are covered. Prerequisite: 102.

323-3 Psychology of Employee Relations. Applied human relations at work focusing on interpersonal and small-group behavior. Covers effective communication, employee morale and motivating others, behavior

modification, leadership and group dynamics, human relations and the law, and stress and coping. Prerequisite: 102.

333-3 Psychology of Women. (Same as Women's Studies 341.) An examination of empirical evidence on the biological, psychological, and social functioning of women, describing women's roles, the genetic versus social determinants of women's behavior, and the implications for women's potential. Prerequisite: 102 or consent of instructor.

340-3 Introduction to Clinical and Counseling Psychology. Provides an in-depth understanding of the nature of two major specialties in the field of psychology: clinical and counseling psychology. Students will examine the historical origins of the two areas, study their major theoretical definitions, compare and contrast the areas, and sample empirical and practitioner activities unique to them. Prerequisite: 102.

371-3 Problem Solving and Decision Making. Indicates how problem solving and decision making can be characterized and evaluated and how they might be modified or improved. Research and theory in related areas of psychology are reviewed with emphasis on the role of thinking, problem solving, expert judgment, and decision making in man-machine systems. Prerequisite: 102.

389-1 to 9 Seminar: Selected Topics. Varied content. Offered as need exists and as faculty interests and time permit. May be repeated as topics vary. Prerequisite: consent of instructor.

391-1 to 9 Individual Project. Individual study, research or experience under the supervision of a member of the Department of Psychology faculty. Of all credits that a student completes for PSYC 391, 392, 393, and 394, a maximum of three hours from any or all of these courses may count towards the major. Mandatory Pass/Fail. Prerequisite: consent of instructor.

392-1 to 9 Individual Project. Individual study, research or experience under the supervision of a member of the Department of Psychology faculty. For use in those cases where the faculty member deems a graded course to be appropriate. Of all credits that a student completes for PSYC 391, 392, 393, and 394, a maximum of three hours from any or all of these courses may count towards the major. Prerequisite: consent of instructor.

393-1 to 9 Preprofessional Practicum. Directed experience in human services or other activities relevant to psychology at a public or private institution, agency, or organization. The experience is usually, although not necessarily, on a volunteer basis. Enrollment must be approved in advance by the director of undergraduate field placements for the Department of Psychology. Mandatory Pass/Fail. Prerequisite: consent of instructor.

394-1 to 9 Undergraduate Practicum in the College Teaching of Psychology. Supervised practicum in the college teaching of psychology for selected senior psychology majors. Of all credits that a student completes for Psychology 391, 392, 393, and 394, a maximum of three hours from any or all of these courses may count towards the major. Prerequisite: senior psychology major and permission of instructor.

407-3 Theoretical Issues in Learning. An introduction to the major theoretical issues in learning and their importance. A brief review of the history of such problems will be followed by a summary of the current research concerning these issues. Traditional figures in learning theory will be considered within the context of their positions on specific questions. Prerequisite: 211 and 309 or equivalent or graduate status.

409-3 History and Systems of Psychology. A review of the conceptual and empirical antecedents of modern psychology. Prerequisite: 211 and senior status, or graduate status.

411-3 Principles of Training. An in-depth coverage of practical problems concerned with training to which the principles of learning derived from pure laboratory investigations can be applied. Prerequisite: 211 and 309, or graduate status.

413-3 Individual Differences. Reviews the reliable and theoretically significant individual and group differences that have been revealed by research in the behavioral sciences. Examines differences in general intelligence, specific verbal and spatial abilities, stylistic and personality characteristics, as well as such group differences as sex, race, and socioeconomic status. Prerequisite: 211 and 305 or graduate status.

415-4 Psychopharmacology. A survey of the effects of drugs on the normal and abnormal behavior of humans and animals. A primary focus is upon understanding drug influences on behavior in relation to actions on the nervous and endocrine systems. Prerequisite: 211 and 302, or graduate status.

416-3 Recovery of Function Following Brain Damage. A survey of experimental animal and human clinical research as they relate to behavioral recovery following damage in the central nervous system. Recent theories and literature are stressed. Prerequisite: 211 and 302 or consent of instructor, or graduate status.

419-3 Behavior and Heredity. Provides an overview of the experimental and quantitative methods used in studying behavioral differences associated with genetic variables. Elementary aspects of genetics will be included in the course, which will examine several aspects of both human and nonhuman behavior. Prerequisite: 211 or consent of instructor, or graduate status. Zoology 214, Biology 305 or equivalent recommended.

420-3 Advanced Industrial and Organizational Psychology. Advanced examination of topics in industrial and organizational psychology focusing more heavily than Psychology 320 on applications of psychology to human resource management, such as job analysis, performance appraisal systems, personnel selection and training. In addition to exams covering course content, students are required to apply knowledge and skills learned on individual and group projects. Prerequisite: 211.

421-3 Psychological Tests and Measurements. Introduction to test theory and test development. Detailed coverage of selected tests from such areas as intelligence, aptitude and personality. Prerequisite: 211 or graduate status.

431-3 Psychopathology. A comprehensive overview of major psychological problems, including emotional, personality, psychotic and developmental disorders. Problems will be described in terms of their principal features, and research and theory will be reviewed. Strategies of assessment, the utility and limitations of diagnostic systems, alternative views of abnormality, and clinical research methods will be examined. Prerequisite: 211 and 305, or consent of instructor or graduate status.

432-3 Psychopathology of Childhood. An extensive review and systematic evaluation of theories and research pertaining to the behavior disorders of childhood. Emphasis will be upon empirical data and the implications of these data for the classification and treatment of these disorders. Prerequisite: 211 and 301 or graduate status.

440-3 Theories of Personality. A review and evaluation of major personality theories and their supporting evidence. Prerequisite: 211 and 305 or consent of instructor, or graduate status.

441-3 Helping Skills in Clinical and Counseling Psychology. Provides systematic training in helping skills for students considering clinical or counseling psychology as a career. Students learn to identify and demonstrate such individual skills as encouragement, paraphrasing, and reflection of feeling, and will use them in practice situations. Students will also learn to apply various approaches to psychotherapy and counseling using hypothetical case studies. The course is complementary to 340. Prerequisite: 211 and 340 or consent of instructor, or graduate status.

445-4 Introduction to Psycholinguistics. (Same as Linguistics 445.) A broad spectrum introduction to psycholinguistics. Topics to be covered include general methodology for the study of psycholinguistics, the nature of language, theories of human communication, language comprehension and production, first and second language acquisition, meaning and thought, natural animal communication systems and language of the brain. Prerequisite: 211.

451-3 Advanced Child Psychology. An assessment of concepts, methods, and research techniques within selected topic areas of developmental psychology. Prerequisite: 211 and 301, or consent of instructor, or graduate status.

461-3 Advanced Social Psychology. Critical examination of contemporary theories and research in social psychology. Practice in application of scientific findings to real-life problems of individuals and groups. Issues treated in depth are chosen for relevance to student's personal needs and career interests. Not for psychology graduate students. Prerequisite: 211 or 307 or graduate status.

463-3 Attitudes and Persuasion. An examination of theory and research regarding the formation of attitudes, the modification of attitudes, and the techniques for measuring attitudes. Prerequisite: 211 and 307 or graduate status.

464-4 Social Factors in Personality and Adjustment. (Same as Sociology 426.) Review of selected theoretical orientation and research traditions in social psychology. Comparison of different theoretical and methodological approaches: symbolic interaction, role theory, developmental and social psychology, theories of attitude organization and change, studies of belief and value systems, theories of socialization. Prerequisite: 211, 307.

465-3 Needs Assessment Techniques for Mental Health Planning. Surveys methodological techniques for assessing the need for mental health services including developing a resource inventory, use of census and other social indicator data, rates under treatments, community and consumer surveys, hearing and site visits. Attention is also paid to method of presenting results of need assessments to lay boards. Prerequisite: 211 and senior standing in psychology major, or graduate status, or consent of instructor.

489-1 to 12 Seminar: Selected Topics. Varied content. Offered as need exists and as faculty interests and time permit. Prerequisite: 211 and consent of instructor.

499-6 (3,3) Senior Honors in Psychology. Intensive study in selective areas for students qualified for honors work in psychology. A research paper or equivalent will be required. Not for graduate credit. Prerequisite: 211 and consent of instructor.

Radio-Television (RT)

200-3 Understanding Radio and Television. Review of responsibilities of television viewers and radio listeners, critical viewing and listening of radio and television programs. Analysis of techniques and content of programs. Lecture, discussion, critical review. Not for majors in radio-television. Credit will not count toward the major. Not open to students with credit in 300m or Mass Communication and Media Arts 201.

300M-3 Radio-Television Writing Performance Production. Introduction to the functions, theories, materials and techniques of writing, performing and production for radio and television. Students write, perform and produce in radio and television studio laboratories. Extra fee for books and supplies \$15. Prerequisite: Second semester freshman.

305-3 Audience Research and Ratings Analysis. The interrelationships of programs and audiences. Methods of audience and program research. Ratings analysis, station surveys. Survey of relevant research in radio-television. Prerequisite: Mass Communication and Media Arts 201 and successful completion of language skills exam.

308-3 Radio-Television Policies, Laws, and Regulations. Development of American radio and television policies from their constitutional base through federal law, regulatory agencies, and the judicial system. Rights and responsibilities of radio and television organizations and of the public. Required for majors. Prerequisite: Mass Communication and Media Arts 201 and successful completion of Language Skills Exam.

310-3 Radio-Television News Writing. Selecting, writing, rewriting, and editing news material for presentation on radio and television information programs. Laboratory hours required. Prerequisite: Mass Communication and Media Arts 201 300m, successful completion of Language Skills Exam.

311-3 Radio News. The basic techniques of writing, rewriting, and editing news from local and wire service sources, plus reporting and editing by means of audio tape. Students must have daily access to an audio tape recorder and are encouraged to obtain their own cassette recorder. Laboratory hours required. Prerequisite: 310 or consent of the instructor, successful completion of the Language Skills Exam.

325-3 Survey of Cable Communications. History and projections of CATV industry growth, patterns of regulation and use. Relation of cable communication to other media, and to society. Extensive readings and discussion of literature. Prerequisite: Mass Communication and Media Arts 201, successful completion of Language Skills Exam.

340-3 Television Criticism. History and analysis of television genres. Analysis and evaluation of technique, content, and aesthetic effect of television messages. Extensive reading in critical literature, written assignment and evaluation of campaigns and materials. Prerequisite: Mass Communication and Media Arts 201, successful completion of Language Skills Exam.

351-3 Broadcast Programming. Discussion and analysis of radio and television programming formats, strategies and scheduling. Prerequisite: 305 or consent of instructor, successful completion of the Language Skills Exam.

357-3 Broadcast and Cable Promotion. Theory and management of campaigns promoting audience and sales growth by broadcasters, cable and pay-cable services and program distributors; including design, implementation and evaluation of campaigns and materials. Prerequisite: 305 or consent of instructor, successful completion of the Language Skills Exam..

360-3 Radio-Television Performance. The development of disciplines controlling vocal and visual mechanics and interpretative performances for announcers, newscasters, interviewers, and narrators of various radio and television situations. Laboratory hours required. Prerequisite: 310 or 383 or concurrent enrollment or consent of instructor; Communication Disorders and Sciences 104 or Theatre 203 recommended, successful completion of Language Skills Exam.

363-3 Producing for Radio. Planning and producing for the special requirements of the medium. Study of differing formats; production of short forms in laboratory exercises. Laboratory hours required. Prerequisite: 310 or 383 or concurrent enrollment or consent of instructor, successful completion of Language Skills Exam.

365-3 Producing for Television. Planning and producing for the special requirements of the medium. Research, planning, and budgeting for individual and series productions. Laboratory exercises. Final projects carry over to 369. Laboratory hours required. Prerequisite: C in 300m, 310 or 383 or concurrent enrollment, successful completion of Language Skills Exam.

369-3 Directing for Television. Applications of communications theory and unique characteristics of the medium in directing televised productions. Laboratory hours required. Prerequisite: C in 300m and Mass Communication and Media Arts 201, 365 with a grade of B or better; 340 or concurrent enrollment, successful completion of Language Skills Exam.

370-3 Television News. Reporting, writing, editing and producing television news for broadcast using professional grade cameras, recorders and editors. Students will participate in daily news gathering for television newscasts. Laboratory hours in concentrated blocks of time for reporting are required. Prerequisite: 311 or consent of instructor, successful completion of Language Skills Exam.

377-3 Radio and Television Sales and Sales Management. A marketing approach to station and system sales. Use of ratings, RAB, TVB, and station promotion material. Includes selling methods and techniques and sales management techniques (systems approach, inventory control, pricing). Prerequisite: 305 or consent of instructor, successful completion of Language Skills Exam.

380-3 New Technologies. An examination of the factors and forces which lead to expansion and improvements in telecommunications technologies with particular emphasis on the new technologies. The social issues raised or addressed by these technologies will also be analyzed to give students a broad and far-sighted view of the future directions of an expanding industry. Prerequisite: Mass Communication and Media Arts 201, successful completion of the Language Skills Exam.

383-3 Writing for Radio-Television. Experience in writing radio and television formats, and announcements – commercial, public service and promotional. Develops critical awareness and analytical attitude toward broadcast writing, and stresses imagination and creative writing skills. Frequent written assignments in and out of class. Prerequisite: Mass Communication and Media Arts 201, successful completion of Language Skills Exam.

384-3 (1,1,1) Radio-Television Practicum. Practical experience in broadcast operations on the campus. Instructor makes determination on student duties, based on needs of the Broadcast Service or the department and the desires of the student. A minimum of four hours per week. Students obtain application form from academic adviser. Prerequisite: consent of instructor. Mandatory Pass/Fail.

391-2 Independent Study. Area of study to be determined by student in consultation with radio-television faculty. No more than two students may work on the same project. Prerequisite: consent of instructor.

393-3 Radio, Television, and Society. The interrelation of radio and television with social patterns and economic and political systems. Major theories of broadcasting. Effects of these media on society. Required for major. Prerequisite: Mass Communication and Media Arts 201, senior standing or consent of instructor, successful completion of the Language Skills Exam.

395-2 to 6 Internship Program. News production, performance or sales management work experience with a non-university professional organization. The student will be provided an educational experience beyond that available at the University. No retroactive credit for previous work experience. Prerequisite: junior status, gpa of 2.75 or better and consent of instructor. The student must submit an application to seek an internship and receive approval from the Undergraduate Curriculum Committee no later than the fourth week of the semester prior to the internship. May be repeated up to 6 hours.

430-3 News and Public Affairs Programming. Examination of history and scope of news and public affairs programming. Effects of public affairs on programs and audiences. Responsibility of radio and television stations in news and public affairs and community relations. Issues in news and public affairs including ethics.

Prerequisite: senior standing, Mass Communication and Media Arts 201, and successful completion of the Language Skills Exam.

453-3 Educational and Public Broadcasting. The history and regulatory structure of educational and public broadcasting in the United States today, with special emphasis on organizations regulated under the Public Broadcasting Act of 1967. Methods of funding public stations, programming, and careers in educational and public broadcasting considered. Prerequisite: Mass Communication and Media Arts 201, successful completion of the Language Skills Exam.

465-3 Advanced Television Production. Instruction and practical experience in the development of programming for television, resulting in completed segments for broadcast in individual and series production. Students will utilize the facilities of the Broadcasting Service and produce programming for WSIU-TV. For undergraduate students only. Prerequisite: 365 or consent of instructor and successful completion of Language Skills Exam.

467-3 International Broadcasting. An examination of broadcasting theory related to rural audiences in the United States and abroad. History of farm broadcasting in the United States and abroad. Communications in development is explored. Research on effects on rural audiences. Open to non-majors with consent of instructor. Prerequisite: senior standing, Mass Communication and Media Arts 201 and successful completion of Language Skills Exam.

470-3 Television News Field Production. Advanced field reporting for television. Students will work under the supervision of the instructor to develop, investigate, and report news stories for television. This process will also study the development and production of the mini-documentary. Class will utilize professional grade video recorders, cameras and editing systems. Prerequisite: 370 or consent of instructor and successful completion of Language Skills Exam.

473-3 Radio-Television Management Principles. Management history, management styles and systems, sales management (marketing and developing sales packages), maximizing inventory, sales training, gamesmanship, leadership and financial evaluation of broadcast properties, procedures and objectives of broadcast management. Students will be required to prepare: audience analysis for sales/programming; computer generated inventory reports; and marketing strategies. Not for graduate credit. Prerequisite: 305 and senior standing and successful completion of Language Skills Exam.

481-3 Non-Broadcast Television. An examination of the special requirements of business, industrial, and medical uses of television. Management, budgeting, planning and evaluating productions. Exploration of cable television, satellites and other technologies used in non-broadcast situations. Prerequisite: 365 or concurrent enrollment or consent of instructor and successful completion of Language Skills Exam.

483-3 Advanced Radio-Television Writing. Exercises in writing broadcast manuscripts including documentary, drama, and children's programming. Prerequisite: senior standing and 340, 310 or 383, consent of instructor and successful completion of Language Skills Exam.

489-2 to 6 Radio Television Workshop. Advanced work in various areas of radio-television and interrelated disciplines. Prerequisite: consent of instructor.

491-3 Independent Study. Area of study to be determined by student in consultation with graduate faculty. No more than two students may work on same project. Students must complete an application form which is available from the departmental adviser. Prerequisite: senior standing and consent of instructor.

Radiologic Sciences (RAD)

102-3 Introduction to Radiologic Technology and Radiographic Technique. Designed to introduce the student to the medical radiography profession. Students will begin their study of medical terminology, professional behavior, ethics, theory of radiographic exposure and radiation protection. Prerequisite: admission to major and consent of department.

112-3 Anatomy and Positioning I. Designed to provide the student radiographer with didactic instruction and laboratory experience which will lead to the development of clinical competencies. It will serve as a foundation for the development of advanced clinical skills as well. The competencies developed are chest, abdomen, upper and lower extremities. Laboratory fee: \$75. Prerequisite: admission to program and consent of program adviser.

132-3 Anatomy and Positioning II. A continuation of 112 designed to further develop clinical skills and competencies through continued didactic and laboratory experience. Positioning competencies developed in this course include radiography of the pelvic girdle, spine and digestive system. Eight weeks. Prerequisite: 112 and consent of program adviser.

202-3 Radiographic Physics. This course will concentrate on general theories of physics as they relate to matter, mechanics and electricity. It also involves the study of the nature and production of radiation and understanding of the complexity of radiographic equipment and circuitry. Prerequisite: 102 and 112.

212-2 Special Procedures. Includes the study of contrast producing agents which are used to visualize specific parts of the body. Radiographic technique employed in this type of imaging is highly specialized and will be studied in depth. Prerequisite: 222, 372a and consent of program adviser.

222-10 Radiography Clinic I. The student is assigned to a selected clinical education center for the entire semester. During this semester, the student radiographer is expected to practice and perfect the professional skills developed the previous semester on campus. The student is supervised by a qualified radiographer and directed in specific experiences designed to meet the objectives for the semester. Prerequisite: 102, 112, 132, 202.

232-3 Selected Systems (Radiography). Designed to instruct the student in the anatomy and positioning of the skull, digestive, excretory, biliary and human reproductive systems. Routine projections common to most

health facilities will be described, demonstrated and then practiced on a phantom in the energized lab. A \$50 laboratory fee is required. Prerequisite: 222, 372a, and consent of department.

312-3 Radiographic Pathology. Deals with the etiology and processes of trauma and disease. Emphasis will be placed on radiographic pathology of the body systems and the manifestation of this pathology. Prerequisite: 332, 372b, and consent of program adviser.

322-3 Sectional Anatomy, Computed Tomography and Magnetic Resonance Imaging. Includes the study of anatomical structures from the transverse, sagittal and coronal section perspectives. Also included is an introduction to computed tomography and magnetic resonance imaging technology. Emphasis will be placed on (1) identifying the imaging plane demonstrated; (2) identifying anatomy visualized in a given plane; and (3) differentiating between images produced by computed tomography and magnetic resonance imaging. Prerequisite: 332 and 372b.

332-10 Radiography Clinic II. The student returns to the clinical education center for this semester. The student radiographer is expected to continue to practice previously developed professional skills and to assume performance of additional examinations studied during the previous semester. This semester of clinical study includes proficiency testing which, when completed, will allow the student to assume full responsibility for the examination in the future. Prerequisite: 212 and 232.

342-3 Radiation Biology. Designed to instruct the student radiographer in the principles and terminology of radiobiology. Emphasis will be placed on how these principles relate to radiation protection for both the patient and radiographer. Also included are introductions to nuclear medicine and radiation therapy technology. Prerequisite: 332 and 372b.

352-4 Special Imaging Modalities. This course provides the student with the knowledge and understanding relevant to the function, operation and application of the various techniques used in image production. Prerequisite: 332 and 372b.

360-2 Introduction to Radiation Oncology. The rationale for and methods employed in the treatment of cancer by radiotherapy. The role of radiotherapy and its relationship to other modalities utilized in the treatment of cancer are explored and defined. Also, an introduction to the principles and concepts of radiotherapy. Prerequisite: limited to major.

361-2 Ultrasound Terminology. A study of the diagnostic foundations of clinical medicine pertinent to sonography including obtaining the clinical history, the pathologic basis for disease, related clinical signs and symptoms, and emergency medical procedures. The medical terms pertaining to sonography are discussed. Prerequisite: limited to major.

362-4 Radiography Clinic III. Last clinical course of the program. Students are expected to demonstrate knowledge and competency of radiographic examinations listed in categories one through nine. Image evaluations will be performed on a weekly basis by the clinical instructor as well as behaviors/attitudinal ratings. Prerequisite: 312, 322, 342 and 352.

363-4 MRI/CT Physics and Instrumentation. This course will focus on the general physics involved in MRI and CT. Topics of discussion for MRI will include electromagnetism, radiofrequency system, gradient system, nuclear magnetism, Larmor frequency, tissue characteristics, spatial localization, imaging artifacts. Topics for CT discussion will concentrate on various system components including the X-ray tube, detector, collimation and the computer and array processor. Prerequisite: major only.

370-3 Techniques and Applications of Radiotherapy. The technical aspects of radiotherapy including dosimetry, shielding, radioactive sources and methodology. Prerequisite: limited to majors.

371-3 Ultrasound Imaging I. A study of the clinical applications within abdominal sonography including interpretation of clinical laboratory tests, related clinical signs and symptoms, and normal sonographic patterns. This course includes a laboratory section on basic scanning techniques and protocol. Prerequisite: limited to majors.

372-4 (1,1,2) Radiographic Film Critique. (a) Concurrent with clinical study, the student will participate in the technical review of the films taken fulfilling introductory objectives set for this course. Prerequisite: 102, 112, 132, 202. (b) The student will continue to develop abilities to review an examination from a technical standpoint utilizing more advanced knowledge to fulfill course objectives. Prerequisite: 212, 232. (c) Final competencies in the technical production and review of the finished radiograph are determined and evaluated. Also included is a review of the knowledge learned in the program. Prerequisite: 312, 322, 342, 352 or consent of department.

373-4 Sectional Anatomy and Imaging Applications. This course focuses on the study of anatomical images reproduced by CT and MRI scanners in the transverse, coronal, sagittal and orthogonal planes. Discussion will include the head, neck, spine, chest, abdomen, pelvis, musculoskeletal and vascular systems. Information pertaining to dynamic scanning, fast scanning, spiral scanning and 3-D imaging will also be discussed. Prerequisite: majors only.

380-3 Physics of Radiotherapy. Physical principles and application thereof, specifically in radiation therapy. A review of basic radiotherapy principles which will be expanded upon in later courses. Prerequisite: limited to majors.

381-3 Ultrasonic Instrumentation. Basic physics of ultrasound; ultrasonic wave generation and propagation and influences on sound beams related to propagation and reflection methods of influencing ultrasonic energy by transducer design; variation in sound beam patterns; interfaces with basic instrumentation techniques and the doppler effect. Basic types of equipment and quality control are discussed. Prerequisite: limited to majors.

383-3 Patient Safety and Quality Assurance. This course will concentrate on patient screening, assessment and monitoring, IV procedures, contrast agents, safety precautions and biological considerations in CT and

MRI. Topics of discussion will also include signal to noise, spatial and contrast resolution, slice thickness, RF shielding and field homogeneity and shimming. Prerequisite: majors only.

390-2 Oncologic Nursing. Nursing techniques utilized on patients with cancer and those in the terminal state of illness. Emphasis on the psychological needs and problems of those suffering terminal illness. Special topics will include care of the skin during and after radiotherapy, assisting patients in learning home care and dealing empathetically with patients and relatives. Prerequisite: limited to majors.

391-3 Sectional Anatomy. A study of sectional anatomy in the transverse, longitudinal and coronal planes, with emphasis on the organs of sonographic interest within the abdomino-pelvic cavity. Prerequisite: limited to majors.

393-3 Data Acquisition and Processing. This course focuses on the various pulse sequences and imaging parameters used in MRI. Discussion for CT will include image reconstruction. Prerequisite: majors only.

400-3 Radiation Dosimetry and Instrumentation. The principles of radiation dosimetry and related instrumentation. Topics include aspects of calibration, monitoring, protection and dose determination of x and gamma radiation. Prerequisite: limited to majors.

401-10 Clinical Internship I. Observation and practice of all clinical duties performed in the ultrasound department. Basic instruction and scanning experience in abdominal sonography. Prerequisite: 361, 371, 381, 391 and concurrent enrollment.

403-10 Clinical Internship I. The student is assigned to a selected clinical education center for the entire semester. During this semester, the student is expected to practice and perfect the professional skills developed the previous semester on campus. The student will be supervised by qualified MRI/CT personnel and directed in specific experiences designed to meet the objectives for the semester. Prerequisite: 363, 373, 383, 393.

410-10 Radiotherapy Clinical Internship I. A practicum in which the student functions under direct and remote supervision and applies the knowledge gained in the classroom; functioning in the clinical setting to interpret and execute the radiotherapist's orders and operate the ionizing radiation equipment during actual patient treatments. Prerequisite: 360, 370, 380, 390 and 400.

411-2 Ultrasonic Imaging II. A study of the clinical applications within the sonographic specialties of obstetrics-gynecology, neurosonography, echocardiography and peripheral vascular doppler. Topics of discussion include related clinical symptoms and laboratory tests, and normal and abnormal sonographic patterns. This course includes a laboratory section on basic scanning techniques. Prerequisite: 361, 371, 381, 391.

413-2 Research Methods. The basic research methods and techniques used in the design, investigation and reporting of information as it pertains to the MRI/CT profession. Prerequisite: 363, 373, 383, 393.

420-3 Special Problems. A review of interesting and/or rare cases to include discussion of clinical symptoms, treatment patterns, technical pitfalls, survival statistics and patient/family interactions. Both written and oral seminar responses will be included in this course. Prerequisite: concurrent enrollment in 410.

421-1 Ultrasound Case Review. A review of interesting and/or rare cases to include discussion of clinical symptoms, sonographic patterns and technical pitfalls. Prerequisite: concurrent enrollment in 401.

431-2 Biological Effects of Ultrasound. The potential hazardous effects of ultrasound. Topics to be discussed include thermal, cavitation and direct effects of ultrasound. Prerequisite: 361, 371, 381, 391.

Recreation (REC)

300-3 Introduction to Leisure Services. An introduction to the professional field of recreation. A study of the historical, philosophical, sociological, psychological, and economic development of leisure and recreation. Insight into the fundamental concepts, values, and functions of leisure and recreation as an individual emotional experience as well as a necessary part of community life.

301-3 Leadership in Recreation. An examination of leadership theories and styles appropriate for activity leaders in recreation. Emphasis will be placed on leadership process and methodology as applicable to leisure service settings.

302-3 Program Design and Group Dynamics. A study of essential elements and basic principles involved with the organization and administration of various types of recreation programs and services. Prerequisite: 300 or concurrent enrollment.

303-3 Recreation For Special Groups. Problems and characteristics of special groups in society such as teenagers, aged, emotionally disturbed, mentally retarded, physically handicapped, prisoners, and delinquents. Emphasis on leadership processes, methodology, and program materials. Prerequisite: 300 or consent of department.

304-3 Principles and Practices of Therapeutic Recreation. Study of the existing practices and principles utilized in therapeutic recreation; professionalism; legislation; team approaches; activity analysis; supervision functions; community resources; special recreation programs. Prerequisite: 300, 302, 303.

305-1 Pre-Practicum. An introduction to the responsibilities and opportunities of field experience within the field of recreation. The course includes field experience identification and selection, resume preparation, letters of application, interview procedures, professional skills, and development.

330-3 Outdoor Education. Philosophy and principles underlying the programs and methods in modern outdoor education and school camp programs with emphasis on curriculum enrichment through our natural resources. Expenses for required field trip not to exceed \$20. Prerequisite: 300, 302, 303 or consent of department.

331-3 Outdoor Living Skills. Introduction to basic living skills in wilderness environments. Topics include low-impact camping, food rations planning, clothing, travel techniques, equipment, and navigation. Sixteen class meetings plus a one-week wilderness trip. Trip fee not to exceed \$250. Wilderness Education Association Stewardship Certification may be earned.

365-3 Administration of Leisure Services. Administrative procedures in park and recreation departments — organization, finance, personnel, facilities, program, public relations, and other areas of administration. Prerequisite: 302.

366-3 Workshop in Administrative Issues in Recreation. Designed to examine in a workshop current administrative issues in recreation such as practices and trends in budget and finance, legal aspects, grant writing, personnel practices and policies, and others. Prerequisite: 365.

367-3 Research and Evaluation in Recreation. An introduction to methodological approaches to the scientific study of phenomena inherent to recreation and leisure. The course includes basic research and evaluation designs, research and evaluation report writing, analysis of current leisure research, and use of computers in leisure research and evaluation. Prerequisite: 300, 302, 303.

370-3 Camp Management. Principles and procedures of selection and supervision of personnel, program planning, food preparation, health and safety, camp maintenance, evaluation, camp counseling, and other responsibilities of camp administration. Prerequisite: 300, 302, 303 or consent of department.

375-3 Commercial Recreation and Tourism. Problems of commercial recreation and tourism will be addressed in this class. Topics include: free enterprise, marketing, transportation industry, attractions, food and lodging industry and government's role in tourism.

377-3 Overview of Campus Recreation. Focuses on the administration, organization, planning, implementation, and evaluation of programs and facilities in the campus recreation field. Specific topics addressed include historical and philosophical aspects, administrative practices, competitive and non-competitive programming, future trends and issues, budgeting, public relations, professional associations, and examination of individual characteristics of a variety of campus recreation programs conducted nationwide.

380-2 to 6 (2,2,2) Field Work in Recreation. Supervised leadership experiences in a public or private recreation setting. Students register for two hours per semester. Only one field work may be done per semester. Students must complete field experience in at least two areas of specialization. A minimum of four hours and a maximum of six hours of credit may be earned. Prerequisite: 300, 301, 302, 303 and 305; a minimum SIUC gpa of 2.25.

385-1 to 2 Readings in Recreation. Selected readings in professional publications for the purpose of becoming acquainted with the types of research current in community, park, special populations, outdoor recreation, outdoor education, and related fields. For recreation majors only. Prerequisite: 15 hours in recreation.

386-1 to 2 Problems in Recreation. Designed to enable students to effectively request funds, request personnel, initiate new programs, or support recreation leisure services. Prerequisite: 15 hours in recreation.

395-3 Site Maintenance and Operation. All phases and principles of development, maintenance, and construction of areas and facilities used in a recreation setting. Stress is put on selection and supervision of maintenance personnel. There is a maximum cost of \$5 for course materials in lieu of textbook. Prerequisite: 300, 302, 303 or consent of department.

401-3 Fundamentals of Environmental Education. (Same as Agriculture 401.)

423-3 Environmental Interpretation. (Same as Agriculture and Forestry 423.)

425-3 Planning and Design of Recreational Facilities. An examination of major design considerations for a variety of recreation facilities such as recreation centers, recreation sport complexes, parks, visitors centers, and natatoriums. Special attention will be given to long range facility planning. Prerequisite: senior or graduate standing.

431-3 Expedition Leadership. Course focuses on professional leadership of highly adventurous wilderness trips. Emphasis is on development of sound judgment, decision-making, and teaching in wilderness expeditions. Three to five week expeditions in a wilderness setting. Trip fee not to exceed \$500. Outdoor Leader Certification by Wilderness Education Association is offered.

440-15 (3,3,3,3,3) Therapeutic Recreation for Selected Populations. Students will be made aware of problems and characteristics of special population groups. Emphasis is upon the role of therapeutic recreation with these groups in institutional and community settings: (a) Therapeutic Recreation for the Mentally Ill. (b) Therapeutic Recreation for the Developmentally Disabled. (c) Therapeutic Recreation for the Aged. (d) Therapeutic Recreation for the Socially Deviant. (e) Therapeutic Recreation for the Physically Disabled. Prerequisite: 300, 302, 304 or consent of department.

445-3 Outdoor Recreation Management. Philosophy and principles underlying the growth and development of outdoor recreation management. Outdoor recreation is examined in terms of historical values, long range planning, site design, visitor needs, and environment impact. A laboratory cost of up to \$14 may be required. Prerequisite: 300, 302, 303 or consent of department.

460-3 Therapeutic Recreation Management. Organization and administration of therapeutic recreation programs in hospitals, nursing homes, schools for the retarded, detention centers, prisons and other institutions. Financial management and reimbursement issues are stressed. Prerequisite: 300, 302, 304 or consent of department.

461-3 Program Design and Evaluation for Therapeutic Recreation. To equip the student with skills necessary to systematically design and evaluate programs. Philosophy and nature of systems, system analysis, assessment, individual treatment planning, implementation and evaluation of treatment programs. Prerequisite: 300, 302, 304, one section of 440, or consent of department. Concurrent enrollment in 380.

462-3 Facilitation Techniques in Therapeutic Recreation. This course is designed to provide an understanding of the basic processes and techniques of therapeutic recreation and to develop technical competencies necessary for the provision of quality therapeutic recreation services. Emphasis is on the skillful application of various processes and techniques to facilitate therapeutic changes in the client and the client's environment. Prerequisite: 304 or concurrent enrollment.

465-3 Advanced Administrative Techniques. Designed to examine current administrative topics in recreation such as practices and trends in budget and finance, legal aspects, grant writing, personnel practices and policies and others. Prerequisite: 365, 380.

475-3 to 39 (3 credits per topic) Recreation Workshop. Critical examination and analysis of innovative programs and practices in one of the following areas: (a) Budget and Finance, (b) Campus Recreation Services, (c) Commercial, (d) Maintenance of Areas and Facilities, (e) Outdoor Recreation, (f) Personnel, (g) Technological Advances, (h) Therapeutic Recreation—Aging, (i) Therapeutic Recreation—Developmental Disability, (j) Therapeutic Recreation—Emotional Illness, (k) Therapeutic Recreation—Physical Disability, (l) Therapeutic Recreation—Prisons and Detention Centers, (m) Tourism.

485-2 to 12 Practicum in Outdoor Education. A supervised experience in a professional setting. Emphasis on administrative, supervisory, teaching, and program leadership in outdoor, conservation, or environmental education setting. Costs for travel are the responsibility of the student. Prerequisite: consent of instructor.

490-12 Internship in Recreation. Supervised practicum experience in a professional recreation setting. Emphasis on administrative, supervisory, teaching, and program leadership in the student's area of specialization. For undergraduate credit only. Must be taken during student's senior year. Prerequisite: completion of all requirements for major in recreation or consent of course coordinator; 2.25 grade point average.

Rehabilitation (REHB)

400-2 to 3 Introduction to Rehabilitation. An introduction to the broad field of rehabilitation, to include the processes (services), facilities and personnel involved. Note: students can enroll in the didactic portion for two credits, or three credits if they elect the field trips. No student can take the field trips alone without taking the didactic portion as well.

401-3 Rehabilitation for Non-Majors. An introduction to the process and practice of rehabilitation for students not majoring in this field. An overview of counseling, evaluation, physical restoration, adjustment services, job placement, and rehabilitation administration will be presented. Also a survey of client characteristics will be provided. Clients with sensory, physical, developmental, and psychiatric disabilities will be discussed. Career opportunities in rehabilitation will be examined.

403-3 Independent Living Rehabilitation. Survey of principles and methods of independent living for persons with disabilities with attention to client assessment for rehabilitation, effective techniques for specific individuals with disabilities, and the variety of types and organization of independent living programs.

405-3 Introduction to Aging and Rehabilitation. Introduction to the field of aging. Includes social, political, economic and legal issues pertinent to an aging society and rehabilitation.

406-3 Introduction to Behavior Analysis and Therapy. A survey of the principles and procedures in behavior analysis and therapy and the scope of its application to human needs and problems.

419-1 to 3 Cross-Cultural Rehabilitation. (Same as Black American Studies 490.) Major focus on the relationship/comparison of basic cultural, economic, and psychosocial processes relative to the rehabilitation of people in contemporary societies. Prerequisite: consent of instructor.

421-3 Vocational Development and Placement. Relates the psychosocial meaning of work, process of vocational development, theories of occupational choice and labor market trends to current and innovative methods of job development, selective placement, and follow-up with the handicapped. Prerequisite: consent of instructor.

425-1 to 6 Developing Employment Opportunities. Designed to train rehabilitation personnel in the attitudes, methods, and skills pertinent to placement of handicapped persons with disabilities in competitive and other occupations. Prerequisite: special standing and consent of instructor.

436-3 to 4 Vocational Evaluation and Adjustment Services. Introduction to the philosophies of evaluation and adjustment services in rehabilitation settings with emphasis on the rationale for use of psychometric testing, functional behavioral analysis, work sampling, situational assessment, and on the job evaluation in relation to the development of individualized adjustment service programs.

445-3 to 12 Rehabilitation Services with Special Populations. Procedures and programs pertinent to the care and treatment of special populations. Three semester credits will ordinarily be granted for each unit. Prerequisite: consent of instructor.

(a)-9 (3,3,3) Alcohol and Drug Abuse.

(b)-9 (3,3,3) Emotionally Disturbed.

(c)-9 (3,3,3) Juvenile Offender.

(d)-9 (3,3,3) Mental Retardation.

(e)-9 (3,3,3) Physically Disabled.

(f)-9 (3,3,3) Public Offender.

(g)-9 (3,3,3) Sensory Disabled.

(h)-9 (3,3,3) Developmental Disabilities.

446-3 Psychosocial Aspects of Aging. Selected theories of psychosocial aspects of aging will be presented and the psychological and sociological processes of aging with the ensuing changes will be related to these conceptual frameworks. Included for discussion and related to field experience will be such concerns as stress reactions to retirement, physical disabilities, impact of reduced economic resources, and other personal-social changes in aging. Topics will address the knowledge base needed by students concerned with rehabilitation of aging clients in institutional, community and home settings. Therapeutic techniques to ameliorate these stresses will be an integral part of the course.

447-3 Biomedical Aspect of Aging. The aging process in a life-span developmental perspective; biological theories of aging, physiological changes in middle and old age and their effects on behavior, performance potential, and psychosocial functioning; senility and other age-related disabilities, their prevention and management; geriatric health maintenance and rehabilitation; institutionalization; death and dying. No prerequisites.

452-3 Behavior Change Applications. An overview of the development and evolution of applied behavior analysis. Applications of behavior analysis to problems of social significance in institutions, schools, and communities are surveyed. Prerequisite: 406 or consent of instructor.

453-1 to 4 Personal and Family Life Styling. The academic and personal competencies that are characteristic of fully-functioning, integrated persons within the context of our twentieth century environment will be systematically reviewed for adoption in every day living as well as in professional functions. Participants will focus on and experience life styling theories, models, and skills for their own growth and development and learn to assess basic risk-factors in their rehabilitation clients and families prior to helping them program a more balanced, synergistic, and holistic approach to living. Prerequisite: consent of instructor.

461-3 Introduction to Alcoholism and Drug Abuse. Orientation and introduction to a variety of topics related to alcohol and drug abuse; surveys history, theories of cause and development, consequences of abuse, classes and types of drugs, legislation, and other current issues relating to substance abuse and addiction.

468-3 Sexuality and Disability. Research and rehabilitation practices pertaining to the unique psychosexual aspects of various chronically disabling conditions will be examined.

471-3 Rehabilitation and Treatment of the Alcohol and Drug Abusers. A comprehensive examination of substance abuse treatment and rehabilitation; focus on various treatment approaches, treatment settings, and types of counseling to include an overview of individual, group, and family techniques; the rehabilitation counselor's role is addressed and necessary skills in treating drug and alcohol abusers. Prerequisite: 461 or consent of instructor.

479-3 Technical Writing in Rehabilitation. Fundamentals of writing skills for rehabilitation specialists, including preparation and drafting of program/grant proposals, vocational evaluation/work adjustment reports, news releases and other publicity materials. Prerequisite: consent of instructor.

490-1 to 6 (1 to 3 per semester) Readings in Rehabilitation. Supervised readings in selected areas. Prerequisite: consent of instructor.

494-1 to 12 Work Experience in Rehabilitation. Rehabilitation 494 and 594 both cannot be counted for a graduate degree, only one or the other can satisfy requirements toward a master's degree. Prerequisite: consent of department.

Respiratory Therapy Technology (RESP)

203-5 Principles of Respiratory Therapy. A course designed for the beginning respiratory therapy student. An introduction to the state of the art and fundamental principles and devices used in respiratory care practice. Significance is given to indications and contra-indications for therapeutic modalities, appropriate equipment selection, airway management and rehabilitation. Five hours lecture per week. Prerequisite: respiratory therapy major, consent of instructor and completion of a college physics course.

213-1 Respiratory Therapy Laboratory. Concepts and theories are applied in a laboratory setting to provide and enhance a working knowledge with respiratory therapy equipment, the physical principles of equipment operation and pulmonary therapeutic techniques. One hour credit for two laboratory hours weekly. \$25 laboratory fee is required. Prerequisite: concurrent enrollment in 203, respiratory therapy major, consent of instructor.

223-2 Patient Care Techniques. Presents basic principles and essential skills necessary to perform patient care safely and effectively. Skills include medical asepsis, terminology, communication, patient assessment and positioning, medical ethics and behavioral problems unique to patients with respiratory illnesses. Lecture. Prerequisite: consent of program adviser.

243-3 Basic Cardiopulmonary Physiology. A presentation of physiological functions including acid-base relationships, gas perfusion, functions of ventilatory control, ventilation perfusion analysis, cardiopulmonary hemodynamics and blood gas analysis. Prerequisite: Allied Health Careers Specialties 141, physics, chemistry, zoology or equivalents.

253-1 Clinical Practice I. Orientation to the clinical setting with special emphasis on basic procedures and the role of the respiratory therapy department as part of the health care system. Equivalent to one eight-hour session per week for the semester. Prerequisite: concurrent enrollment in 203, 213, 223, 243 and 313.

263-3 Principles of Mechanical Ventilation. Introduces mechanical function of equipment used in continuous and intermittent ventilation of adult, pediatric and neonatal patients. Indication, contraindications, and hazards of continuous ventilation with significance given to ventilatory management and monitoring techniques. Three lecture hours per week. Prerequisite: 203, 213, concurrent enrollment in 273 and respiratory therapy major.

273-1 Mechanical Ventilation Laboratory. A laboratory practical course with emphasis on functional mechanical ventilation characteristics, assembly of patient circuits, ventilator monitoring and weaning techniques. Also included is the analysis of arterial blood gas parameters and assessment of the ventilator patient. A \$25 laboratory fee is required. Prerequisite: concurrent enrollment in 263, 213 and respiratory therapy major.

283-3 Survey of Pulmonary Diseases. An introduction to the nature, cause and treatment of pulmonary diseases which involve changes in structure and function. Prerequisite: 243, 313 and Allied Health Careers Specialties 141.

293-2 Clinical Practice II. Supervised clinical experience which emphasizes fundamental respiratory therapy procedures and introduces the student to critical care management. Equivalent to sixteen clinical hours per week. Prerequisite: 203, 213, 243, 313 and 253.

303-1 Clinical Simulation Study. Designed for the advanced respiratory care student or practitioner in preparation for the clinical simulation examination required for the NBRC advanced practitioner credential. Con-

tent will review format, matrix and examples of clinical simulations and typical case studies used on the examination. Conducted via independent study with a computer emphasis. One lecture/assessment hour per week. Computer lab as necessary. Prerequisite: consent of instructor.

313-3 Respiratory Pharmacology. This course is devoted to the study of drugs, their nature, properties and effects on the human body. Special emphasis is given to drugs which affect the cardiopulmonary and renal systems. Prerequisite: physics, chemistry, mathematics, Allied Health Careers Specialties 141.

323-3 Respiratory Pathophysiology. A discussion of pulmonary complications with obstructive and restrictive disease components and their relationship with pulmonary function studies and blood gas analysis. Emphasis is given to patients with complications directly or indirectly affecting respiration and clinical applications. Prerequisite: 243, physiology, and respiratory therapy major.

343-2 Neonatal/Pediatric Respiratory Care. Respiratory care of the neonate and pediatric patient is presented with emphasis on: physiology; cardiopulmonary disorders and diseases; assessment, evaluation and monitoring; and respiratory therapy modalities of treatment. Prerequisite: 243.

353-8 Clinical Internship. Integration of clinical practice and knowledge for the advanced student. Students receive clinical experience in neonatal and adult intensive care units with an emphasis in ventilatory management. Students should plan to attend a major medical institution off campus for sixteen weeks in the fall. Prerequisite: 263, 273, 293, 323, 343, 363.

363-3 Cardiopulmonary Evaluation and Monitoring. An intensive study of diagnostic testing and monitoring techniques used in the clinical evaluation of the cardiac and pulmonary systems. Cardiopulmonary assessment is presented using pulmonary function testing, electrocardiograph and noninvasive and invasive cardiopulmonary tests. Prerequisite: 243, 313, 203, 213.

373A-2 Clinical Practice III. Through a systematic review of all didactic material covered in prior respiratory therapy courses, and clinical internship experience with respiratory therapy therapeutic, diagnostic and monitoring procedures, students will demonstrate knowledge and proficiencies to be a practicing respiratory therapy graduate. Prerequisite: concurrent enrollment in 353.

373B-2 Clinical Practice III. Research seminar: a faculty supervised research project identifying rural clinical problems relevant to respiratory therapy is completed by the student. Project requires research instrument development and analysis. Prerequisite: 293 and respiratory therapy major.

Russian (RUSS)

136-8 (4,4) Elementary Russian. Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of Russian required. Must be taken in a,b sequence.

201-8 (4,4) Intermediate Russian. Continuation of the language structure with practice in oral and written Russian. Must be taken in a,b sequence. Prerequisite: 136 or two years of high school Russian or equivalent.

220-4 (2,2) Intermediate Russian Conversation. Practice of oral skills on the intermediate level. May be taken as companion course to 201a,b or with consent of instructor. Prerequisite: 136b or equivalent.

305-4 Advanced Conversation and Composition. Improvement of self-expression, oral and written comprehension, free composition and conversation; readings based on the history of Russia, as well as readings of magazine and newspaper articles. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: 201 or equivalent.

306-3 Intermediate Readings in Russian. Designed to improve skills in reading selections from Russian prose. Prerequisite: 201 or equivalent.

320-3 Advanced Language Skills. A review of fine points of grammar and polishing of student's syntax. Prerequisite: grade of B or better in 201b or permission of instructor.

330-4 Introduction to Russian Literature. Reading and analysis of the texts selected from Russian literature.

350-3 Russian Phonetics. Analysis of the sounds of Russian and their manner of production; intonation and stress; levels of speech, oral practice. Prerequisite: 201b.

375-3 to 6 Travel Study in USSR. Supervised travel-study program in the USSR. Prerequisite: 201 or equivalent.

388-3 Russian as a Research Tool. Intensive study of Russian as basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor.

390-1 to 6 (1 to 3, 1 to 3) Independent Study in Russian. Directed independent study in a selected area of Russian studies. Prerequisite: consent of instructor.

411-3 Russian Stylistics. Writing styles in Russian and its application to the development of skills in written expression. This course satisfies the CoLA Writing Across the Curriculum requirement.

415-3 Russian Linguistic Structure. Structural analysis of present-day Russian with special attention to morphology and syntax.

430-4 Business Russian. A study of the style of commercial language and its application to the development of skill in business correspondence, such as: inquiries, offers, orders, contracts, agreements, as well as documents concerning transport, insurance, and customs. Prerequisite: 201 or equivalent.

465-3 Soviet Russian Literature. Major fiction writers and literary trends since 1917. Lectures, readings, and reports.

470-3 Soviet Civilization. Soviet culture and civilization is studied primarily through literary works, journalistic materials, and excerpts from non-literary works as general background reading. Lectures are illustrated with maps, slides, films and art works. Taught in English. Readings are in English and in bilingual edition. No prerequisite: May count toward Russian major with consent of graduate adviser.

475-2 to 3 Travel-Study in USSR. Specialized course comprising part of the travel-study program in the Union of Soviet Socialist Republics. Prerequisite: 201 or equivalent.

480-4 Russian Realism. Authors in 19th century Russian literature. Special attention to stylistic devices. Lectures, readings, and individual class reports.

485-3 Russian Poetry. A study of literary trends and representative works of Russian poets.

488-3 Advanced Russian as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of B or A, satisfies graduate program requirement for foreign languages as a research tool. Prerequisite: 388 or one year of Russian or equivalent.

490-1 to 6 Advanced Independent Study in Russian. Directed independent study in a selected area of Russian studies. Prerequisite: consent of instructor.

493-3 to 9 (3 per topic) Seminars in Special Topics in Literature and Language. Topics vary and are announced in advance; both students and faculty suggest ideas. Students taking the course for graduate credit will do a critical study of one aspect. May be repeated as the topic varies. Prerequisite: consent of instructor.

Science, College (SCI)

257-2 to 8 Concurrent Work Experience Credit. Practical experience in a laboratory or other work directly related to course work in a College of Science program and to the student's educational objectives may be used as a basis for granting credit in the College of Science. Credit is given when specific program credit cannot be granted and is usable for elective credit only. Credit for ongoing work experience is sought by petition and must be approved by the dean and the executive officer of the student's major program before registration. Mandatory Pass/Fail.

258-2 to 8 Work Experience Credit. Practical experience in a laboratory or other work directly related to course work in a College of Science program and to the student's educational objectives may be used as a basis for granting credit in the College of Science. Credit is given when specific program credit cannot be granted and is usable for elective credit only. Credit for past work experience is sought by petition and must be approved by the dean and the executive officer of the student's major program. No grade for past work experience.

259-2 to 24 Vocational Education Credit. Formal, post-secondary, educational credit earned in a military service or other vocational, technical, or occupational program and directly related to the student's educational objectives may be used as a basis for granting credit in the College of Science. Credit is given when specific program credit cannot be granted and is usable for elective credit only. Credit is sought by petition and must be approved by the dean and the executive officer of the student's major program.

388-0 to 36 Study Abroad. Provides credit toward the undergraduate degree for study at accredited foreign institutions or approved overseas programs. Final determination of credit is made on the student's completion of the work. Zero to eighteen credits per semester, zero to nine for summer session. Prerequisite: one year of residence at Southern Illinois University at Carbondale, good academic standing, and prior approval of the course of study by the major department and the College of Science.

Social Work (SOCW)

275-3 Social Welfare as a Social Institution. Explores the interdependence of social, cultural, political and economic factors in the history and practice of social welfare with special reference to development of the social work profession. Focus on service integration and coordination in community-based delivery systems in rural areas, especially for poor and oppressed populations. Prerequisite: Sociology 108, Political Science 114, Economics 113 or concurrent enrollment.

291-3 Social Services and Minority Groups. Exploration of the needs, experiences and attitudes of minority populations pertaining to delivery of social services in rural settings. Emphasis on relationship of cultural diversity to practice, policy and research content.

295-1 to 6 Field Service Practicum in Southern Illinois. This course is designed for freshman and sophomores who are volunteering service to community, social service, or health agencies in southern Illinois. Credit based upon time spent in direct service. Mandatory Pass/Fail.

350-3 to 6 Seminar in Special Issues for Social Work. (a) Practice. (b) Policy and planning. (c) Public welfare services. Topics will be selected from these three areas. Limited to no more than three credit hours per semester. May be repeated as topic varies up to six semester hours.

361-3 Child and Family Services. Problems of child-parent relationships and difficulties in social functioning of children and adolescents. Adoptions, foster home and institutional placements, protective services. Focus on services in rural areas.

363-3 Social Work with the Aged. Basic concepts of social work methods applied to the older adult group. Characteristics of the aged group, its needs and potentials. Social trends and institutions involved in services to the aged.

366-3 Public Policies and Programs for the Aged. An introduction to public policy, program and planning for the aged. A framework is utilized for analyzing policy issues, programs and research in such areas as income maintenance, long term care, transportation, leisure time, housing and social services in order to aid present and future practitioners who work with the aged.

383-3 Interviewing and Interpersonal Helping Skills. This is an introductory course in interpersonal skills in the social services in a systems context. Intake, interviewing and recording are emphasized. Focus on practice in multi-service settings. Prerequisite: Psychology 102.

396-1 to 3 Readings in Social Work. Varying topics not ordinarily covered in depth in regular courses and of specific interest to advanced students. Prerequisite: consent of instructor.

400A-3 Human Behavior and Social Environment I. The first of two courses that examine the normal and dysfunctional life span development from a systems theory perspective. The first course focuses on the behavior of individuals and families. It also explores the impact of the environment and the implications for generalist practice with rural populations. Not for graduate credit. Prerequisite: Plant Biology 115 or Zoology 115.

400B-3 Human Behavior and Social Environment II. Continuation of 400a. A systems perspective is used to examine the theoretical and practice implications of the life cycle as they relate to the development of groups, organizations and communities in rural settings. The course links content to generalist practice skills taught in 401 and 402. Not for graduate credit. Prerequisite: 400a, 401 and 421.

401-3 Generalist Practice I. The first of two courses which prepares for generalist practice. Focuses on intervention skills with individuals and families at a beginning level of proficiency. Emphasis on assessment and treatment in multi-service agencies in rural settings. Not for graduate credit. Prerequisite: 383.

402-3 Generalist Practice II. Continuation of 401. Generalist practice skills and knowledge with groups, organizations and communities at beginning level of proficiency. Emphasis on assessment and treatment in multi-service agencies in rural settings. Not for graduate credit. Prerequisite: 400A, 401 and 421.

411-3 Methods of Social Research. Social work research in generalist practice. Examines the principles, concepts and methods of scientific investigation in terms of its application to social work research and practices. Provides basic skills for self-assessment research in field practicum in spring semester. Not for graduate credit. Prerequisite: 400a, 401, 421, and an introduction to statistics course.

421-3 Social Welfare Policy. In-depth examination of current social welfare policy and program issues in the context of social welfare history in the United States. Utilizes a systematic analytical framework for critical study of multiple causal factors (socio-economic, cultural, governmental structure). Prerequisite: 275, 291 and 383.

441-9 Advanced Field Practicum. At least 15 to 20 hours per week of supervised experience in an approved social service agency. Utilizes learning contracts with goals, objectives and evaluation to integrate course content into practice, including practice self-assessment. Not for graduate credit. Field work practice begins only in spring semester. Mandatory Pass/Fail. Prerequisite: senior standing, 275, 291, 383, 400a, 400b, 401, 402, 411, 421; and a 2.5 grade point average in social work. Must be taken concurrently with weekly practicum seminar (Social Work 442).

442-3 Advanced Field Practicum Seminar. The seminar assists the student who is in field practicum to systematically conceptualize and integrate the field experience with generalist systems theory, skills and knowledge. The seminar builds on and reemphasizes content provided in previous social work courses. Seminar discussion focuses on shared field work experiences: practice issues related to social work principles, ethics and professionalism, and intervention strategies. Not for graduate credit. Prerequisite: must be taken concurrently with 441.

446-1 to 4 Selected Topics in Social Work. Seminar on selected problems and issues in the social work practice. Content varies with interests of instructor and students. Prerequisite: junior standing.

478-1 to 6 International Social Work: Generalist Policy and Practice. Provides an international perspective for the study of social work groups, organizations and communities. Focuses on the examination of assessment and problem solving interventions and cross-cultural comparisons of policy and practice in Austria, Switzerland and Germany.

495-1 to 6 Advanced Field Service Practicum in Southern Illinois. This course is directed at upperclassmen and graduate students volunteering service community, social service, or health agencies in Southern Illinois. Credit based on time spent in direct service. Not for graduate credit.

496-1 to 6 Independent Research in Social Work. Provides opportunity for students to conduct independent research with the guidance of a faculty member. Topics of research are identified by the student and faculty member. Prerequisite: consent of instructor.

Sociology (SOC)

108-3 Introduction to Sociology. (University Core Curriculum) An introduction to the sociological perspective on human behavior, the structure and processes involved in social relationship, social stratification and inequality, social institution, and social change. A survey of major areas of interest in sociology.

215-3 Race and Ethnic Relations in the United States. (University Core Curriculum) Current theory, research and events in race-ethnic relations in the United States, including the intersection of class, gender and sexuality. Topics include the European colonization of North America, dynamics of immigration, identity formation among ethno-racial groups and political economy of racism.

223-3 Women and Men in Contemporary Society. (Same as Women's Studies 221.) Examines theories of women's and men's roles in society. Surveys contemporary gender inequalities in the U.S. and developing countries. Special attention given to employment, race, sexual assault, feminist movements, alternative family/lifestyles and childrearing.

233-3 Sport and Modern Society. (Same as Physical Education 245.) An overview of the social scientific study of sport is followed by an examination of sport and social institutions (education, politics, economics, etc.); sport and social inequality (racial, ethnic, gender, age, etc.); and sport and social change.

298-1 Multicultural Applied Experience. (Multicultural Applied Experience Course) An applied experience, service-oriented credit in American diversity involving a group different from the student's own. Difference can be manifested by age, gender, ethnicity, nationality, political affiliation, race, or class. Students can sign up for the one-credit experience in the same semester they fulfill the multicultural requirement for the University Core Curriculum or coordinate the credit with a particular core course on American diversity, although neither is required. Students should consult the department for course specifications regarding grading, work requirements and supervision. Graded Pass/Fail only.

301-4 Principles of Sociological Analysis. This course familiarizes students with major domains of sociological analysis and basic methods of sociological inquiry. Emphasis on conceptual structure and diverse theoretical perspectives in contemporary sociology. Required of majors and minors in sociology. Recommended for students with special interest in social science.

302-3 Contemporary Social Problems. Review of the basic sociological perspectives used in the study of social problems; discussion and analyses of selected contemporary social problems; assessment of alternative courses of action for the solution of problems.

303-3 Sociology of Deviant Behavior. An overview of sociological theories and research in the study of social deviance. Examines such deviant behaviors as mental illness, sexual deviation, crime, prostitution, drug abuse, eating disorders, alcoholism, and suicide.

304I-3 Families of the World. (University Core Curriculum) Surveys uniformity and diversity to family life among the world's societies and examines the theories concerning family patterns.

305I-3 History of Crime in England and America. (University Core Curriculum) Application of sociological perspective to the study of English and American crime and criminal justice, 1600-present. Examines effects of culture, social structure and social change on criminal behavior and social control.

306I-3 Popular Culture in Society. (University Core Curriculum) Sociological analysis of the meaning of popular culture, the organization of popular cultural production and the relationship between popular culture and social change.

308-4 Statistics for Social Science. Methods and application of statistics in the social sciences. Measures to describe distribution, measures of relationship, statistical inference.

312-4 Elements of Sociological Research. The student is introduced to a variety of research methods in the social sciences including use of the library, techniques of observation, and elementary steps in quantitative measurements and analysis. Satisfies the CoLA Writing-Across-the-Curriculum requirement.

316-3 Political Socialization. (See Political Science 316.)

321-3 Society and the Individual. Examines the relative influence of individual characteristics, face-to-face interactions, and larger social structures in shaping human behavior. Emphasis is on socialization through the life cycle and in various sectors of society (family, schools, work settings.) Explores related topics of attitude formation and change, social influence, the self and self esteem, groups processes, and social power.

335-3 Urban Sociology. Development of cities and urban social life; present day ecology of cities: suburbs, ghettos, blight; strategies of urban renewal; urban life styles; violence and acute urban problems; urban housing needs; designing safe neighborhoods; urbanization in Europe and developing countries.

340-3 Family. The family in historic and contemporary society; evolution of the modern family; changes in family functions, structure, roles; and an examination of variation and change in family systems.

351-3 Sociology of Religion. The origin and function of religious ideas and institutions in society, their relationship to social change and stability.

371-3 Population Problems. Characteristics and problems of population growth, composition, distribution, mortality, birth control and fertility, international and internal migration, and government policies.

372-3 Criminology. The nature of crime; criminal statistics; causal factors and theories of criminality; types of criminals.

384-3 Introduction to Corrections. (Same as Administration of Justice 384.) Various treatment methods used throughout the criminal justice system. Explanation and evaluation of various treatment techniques; e.g., behavior modification, transactional analysis and other individual and group therapies.

385-3 Energy and Society. Development of human social organizations accompanied by increasing control of power, technology, and energy resources. Review of changes in social institutions, social processes, and energy use. Aspects of energy development, conservation, and control.

396-1 to 6 Readings in Sociology. Instructor and student select reading topics which are not covered in depth in regular course offerings. Prerequisite: consent of department and instructor.

397-3 Special Topics in Sociology. Varying sociological topics selected by the instructor for study in depth and breadth. Topics will be announced in advance of registration for the course. Prerequisite: consent of department and instructor.

406-4 Social Change. Theories and problems of social change; their application, with emphasis on the modern industrial period.

415-3 Logic of the Social Sciences. (See Philosophy 415.)

423-4 Sociology of Gender. (Same as Women's Studies 442.) Examines social science theory and research on gender issues and contemporary roles of men and women. The impact of gender on social life is examined on the micro level, in work and family roles, in social institutions, and at the global, cross-cultural level.

424-4 Social Movements and Collective Behavior. A sociological analysis of the behavior of collectivities in uninstitutionalized settings; crowds, masses, publics, and social movements will be examined with relation to their social and cultural backgrounds, forms of expression and organization, and their functions in society.

426-4 Social Factors in Personality and Adjustment. (Same as Psychology 464.) Review of selected theoretical orientations and research traditions in social psychology. Comparison of different theoretical and methodo-

logical approaches — symbolic interaction, role theory, developmental and social psychology, theories of attitude organization and change, studies of belief and value systems, theories of socialization.

435-4 Social Inequality. Discussion of theories and evidence pertaining to the socio-structural causes and consequences of inequality based on social class, prestige, power, gender, wealth and income.

437-4 Sociology of Development. Survey of sociological theories of development including modernization, dependency, and world-system perspectives. Problem areas of development are examined: economic growth, state structures, multinational corporations, labor force, education, migration, population, and women's roles.

438-4 Sociology of Ethnic Relations in World Perspective. Examines theories, concepts and research on the structure of ethnic relations and ethnic problems in contemporary societies in major world regions. Assimilationist, pluralist, secessionist, and militant types of ethnic and racial group relations are covered in selected societies. Designed for students with advanced interest in comparative ethnic relations. Prerequisites: 215 is recommended.

450-4 Social Thought. A survey of Western social thought from the ancient world to the founding of the modern social sciences in the 19th century.

460-4 Sociology of Medicine. Examination of the sociological factors involved in health and illness, the role of medicine in society, the organization of medical care and health institutions in the United States, and the prospects for sociological research in this area.

465-4 Sociology of Aging. The adult life cycle from a sociological perspective, with emphasis on the later stages of adulthood. Special topics on aging include demographic aspects, family interaction, ethnicity, and cross-cultural trends.

471-4 Introduction to Social Demography. Survey of concepts, theories, and techniques of population analysis; contemporary trends and patterns in composition, growth, fertility, mortality, and migration. Emphasis is on relationship between population and social, economic, and political factors.

473-4 Juvenile Delinquency. (Same as Administration of Justice 473.) Nature of sociological theories of delinquency; analytical skills in studying the delinquent offenders; systematic assessment of efforts at prevention, control, and rehabilitation in light of theoretical perspectives. Prerequisite: 6 hours of social/behavioral science recommended.

474-4 Sociology of Education. Methods, principles, and data of sociology applied to the educational situation; relation of education to other institutions and groups.

475-4 Political Sociology. (Same as Political Science 419.) An examination of the nature and function of power in social systems at both the macro- and micro-sociological levels of analysis, the social bases of power and politics; and various formal and informal power structures; the chief focus will be on American society.

476-4 Politics and Religion in Comparative Perspective. Examination of the interaction between politics and religion in the United States, with a comparative look at other nations and global regions. Consideration given to politics and religion as cultural and institutional systems, and to the impact of each upon the other.

484-3 Correctional Institutions. (See Administration of Justice 484).

497-4 Senior Seminar. Contemporary issues in sociology and the analysis of these issues. Prerequisite: senior standing with 20 hours in sociology (including 301), or consent of instructor. Not for graduate credit. Satisfies the CoLA Writing-Across-the-Curriculum requirement.

498-1 to 4 Independent Research. With a faculty member the student arranges a research topic resulting in a paper or report. Prerequisite: senior standing with 20 hours of sociology (including 301), and consent of instructor. Satisfies the CoLA Writing-Across-the-Curriculum requirement.

Spanish (SPAN)

140-8 (4,4) Elementary Spanish. The basic skills of listening, speaking, reading, and writing. No previous knowledge required. Must be taken in a,b sequence.

175-5 Accelerated Elementary Spanish. Elementary Spanish covered in one semester. The basic skills of listening, speaking, reading, and writing. Prerequisite: one year of high school Spanish or equivalent or permission of instructor.

201-8 (4,4) Intermediate Spanish. Continued development of the four basic language skills. Must be taken in a,b sequence. Prerequisite: 140b or 175 or two years of high-school Spanish.

220-2 to 4 Intermediate Spanish Conversation. Practice in spoken Spanish. Prepared and impromptu group discussions on general topics and everyday situations. Frequent short talks by students. Prerequisite: 140b or 175 or two years of high-school Spanish.

273-2 Study in Spain or Latin America. Course taught as part of the summer study abroad program. Prerequisite: one year of college Spanish, or the equivalent.

305-2 to 4 Advanced Conversation. Improvement of self-expression and aural comprehension. Expansion of vocabulary and idioms in Spanish. Prerequisite: 201b or equivalent or consent of instructor.

306-3 Intermediate Readings in Spanish. Designed to improve reading skills in Spanish. Prerequisite: 201b or equivalent.

310-3 Spanish Literature. Study of selected major works. Prerequisite: 306.

315-3 Spanish American Literature. Literature in Spanish America during the 19th and 20th centuries. Prerequisite: 306.

320-4 Third-Year Grammar and Composition. Extensive practice in translation and composition; special attention to grammar problems, idiomatic expressions, and syntactical features. Prerequisite: grade of B or better in 201b or permission of instructor.

335-3 Introduction to Business Spanish. The language of the Hispanic business community in readings, correspondence, and documents. Prerequisite: 320.

370-3 Spanish Culture and Civilization. The cultural patterns and heritage of the Spanish people from earliest times to the present. Class discussion in Spanish will be emphasized in order to improve conversational skills. Prerequisite: 201b or equivalent.

371-3 Spanish-American Culture and Civilization. A survey of the cultural heritage of the Spanish-American peoples. Class discussion in Spanish will be emphasized in order to improve conversational skills. Prerequisite: 201b or equivalent.

388-3 Spanish as a Research Tool. Intensive study of Spanish as a basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor.

390-1 to 4 (1 to 2, 1 to 2) Independent Study in Spanish. Individual exploration of some question, author, or theme of significance within the field of Spanish literature, language, or culture. Prerequisite: consent of instructor.

410-3 Advanced Language Study. Intensive writing practice with emphasis on style, organization, and problematic aspects of grammar. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: 320.

411-3 Linguistic Structure of Spanish. (Same as Linguistics 414.) Theory and practice in Spanish pronunciation and study of Spanish grammatical structure, in contrast to English, with application to teaching.

412-3 History of the Spanish Language. Survey of internal and external history, from Vulgar Latin to Modern Spanish.

419-3 Romance Philology. (Same as French 419.) Historical and comparative study of the major Romance languages: their phonology, morphology, and syntax.

425-3 Spanish Literature Before 1700. The literature of Spain from its beginnings in the Middle Ages through the Golden Age.

430-3 The Golden Age: Drama. Plays of Lope de Vega, Calderon, Tirso de Molina, and others.

431-3 Cervantes. *Don Quixote*.

434-3 Colonial Literature in Spanish America. Study of the literature of Spanish America before 1825.

435-3 Business Spanish. Discussion and practice of the vocabulary, styles, and forms used in Spanish business correspondence, as well as report writing and documents dealing with trade, transportation, payment, banking, and advertising. Prerequisite: 320.

460-3 Spanish Literature of the 20th Century. The main currents and outstanding works in the literature of Spain since 1900.

463-3 Chicano Literature. An introduction to the literature written in the United States by Chicanos and other Hispanics.

485-3 The Spanish American Short Story. Survey of the genre in Spanish America.

486-3 Spanish American Drama. A survey of the development of the genre from the earliest times to the present.

487-3 The Spanish American Novel. Survey of the genre in Spanish America.

488-3 Advanced Spanish as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of B or A, satisfies graduate program requirements for foreign languages as research tool. Prerequisite: 388 or one year of Spanish or equivalent.

490-1 to 3 Advanced Independent Study. Individual exploration of some topic in Hispanic literature, language, or culture. Prior consent of instructor required.

493-3 to 9 (3 per topic) Special Topics in Literature and Language. Topics vary and are announced in advance. May be repeated as the topic varies. Prerequisite: consent of instructor.

Special Education (SPED)

312-3 Teaching Reading in the Elementary School. (Same as Curriculum and Instruction 312) Examination of the reading process with emphasis on the factors and conditions that affect reading. Emphasis on the formulation of a philosophy of reading and its implications in relation to methods, materials, organizational procedures and evaluation techniques. Prerequisite: junior standing and an overall gpa of 2.5.

315-3 Teaching Mathematics in the Elementary School. (Same as Curriculum and Instruction 315.) Objectives of mathematics education, learning theory as it is related to mathematics, major concepts to be taught, modern approaches to instruction with emphasis on the use of concrete learning aids. Four class hours and two laboratory hours per weeks. Prerequisite: Mathematics 114 and 314, or consent of instructor. Junior standing and an over all gpa of 2.5.

400-3 Introduction to Special Education. An overview of characteristics of all types of exceptional children and youth including physical, mental, emotional and social traits. The course also covers the effects of disabling conditions in learning situations, and an overview of the history of special education including legislation and litigation.

401-3 Characteristics of Children and Youth Labeled Behavior Disordered. Diagnosis, screening, classroom management, placement considerations, goals, and the effective use of ancillary services for individuals who experience emotional disturbance and/or social adjustment problems. Emphasis on the understanding of maladaptive behavior through principles of learning and behavior. Prerequisite: 400 or concurrent enrollment or consent of department chair.

402-3 Characteristics of Children and Youth Labeled Mentally Retarded. Emphasizes a developmental approach to understanding and dealing with children who have mildly and moderately reduced mental abilities. Considers historical, theoretical, and practical factors pertinent to mental retardation. Prerequisite: 400 or concurrent enrollment or consent of department chair.

403-3 Characteristics of Children and Youth Labeled Gifted. Designed to help teachers in the identification of and programming for children labeled gifted and talented. Prerequisite: 400 or concurrent enrollment or consent of instructor.

404-3 Characteristics of Children and Youth Labeled Learning Disabled. Behavioral, emotional, physical, and learning characteristics of children and youth, with learning disabilities. Emphasis on receptive and expressive modalities for learning; theories dealing with causes and management. Prerequisite: 400 or concurrent enrollment or consent of department chair.

405-3 Introduction to Early Childhood Special Education: Infants, Toddlers, and Preschoolers with Special Needs and Families. This course presents an overview of Early Childhood Special Education including typical and atypical early development, federal and state legislation, goal setting, IEP and IFSPs, working with families, service delivery, case-management, curriculum methods and procedures for enhancing development in young children with special needs. Prerequisite: 400 or concurrent enrollment or consent of instructor.

406-3 Characteristics of Children and Youth with Moderate and Severe Disabilities. Presents historical, theoretical, and research developments in service delivery for individuals of all ages (0-21) with severe disabilities. Provides the basic developmental, instructional and curricular background essential for prospective educators. Emphasizes a behavioral approach. Thirty hours of observation or equivalent applied experience is required.

409-1 to 6 Cross-Cultural Studies. Seminar and/or directed independent study concerned with socio-cultural variables affecting the personality characteristics and educational needs of children and youth with a disability. Prerequisite: 400 or consent of instructor and department chair.

411-4 Assessment in Special Education. Course covers general assessment information, intelligence and academic norm-referenced test, informal inventories, and adaptive behavior and rating scales. A laboratory fee is required to cover the cost of materials. Prerequisite: 400; one of 401, 402 or 404; or consent of department chair.

412-3 Introduction to Assessment and Curriculum Methods in Early Childhood Special Education. This course presents an introduction to child and family assessment and the development of child and family goals in Early Childhood Special Education. Topics will include types of assessment commonly used, rationale for assessment, methods of assessment, reporting assessment results, writing child and family goals. A fee for testing materials is required. Prerequisite: 400 or concurrent enrollment or consent of instructor.

417-3 Methods and Materials for Teaching Children and Youth Labeled Behavior Disordered. Psychoeducational procedures used in teaching children and youth labeled behavior disordered. Includes field trips, meetings with parents, and visits by resource persons from schools and agencies. Prerequisite: 400, 401.

418-3 Methods and Materials for Teaching Children and Youth Labeled Mildly Retarded. Psychoeducational strategies used in teaching children and youth with mild mental retardation. Prerequisite: 400, 402.

419-3 Methods and Materials for Teaching Children and Youth Labeled Learning Disabled. Psychoeducational strategies used in teaching children and youth labeled learning disabled. Prerequisite: 400, 404.

421-3 Methods and Materials for Teaching Children and Youth Labeled Moderately and Severely Handicapped. Emphasizes a behavioral approach (i.e., systematic instruction) in teaching young students with severe disabilities (e.g., moderate MR, severe MR, profound MR, multiple handicapped, autistic). Systematic instruction is discussed in relation to applications across various curriculum domains. Each student must have access to working with students labeled moderately and severely disabled during the semester. All students are to develop and implement an instructional program during the course of the semester. Prerequisite: 400, 406.

423-3 General Procedures in Special Education. Presents key provisions of Public Law 94-142 and subsequent amendments, including Individualized Education Programs (IEPS). Course content also includes principles of behavior management effective for use in the instruction of students with special needs. Prerequisite: 400; and one of 401, 402, 403 or 404; or consent of department chair.

425-3 Home-School Coordination in Special Education. Cover techniques used in parent interviews, conferences and referrals by school personnel; due process and procedural safeguards for parents of children and youth with disabilities. Prerequisite: 400 or consent of department chair.

430-3 Secondary Programming for Students Labeled Mildly Disabled. Deals with modifications of and additions to school programs to ensure that they are appropriate to the needs of the adolescents labeled mildly disabled. Includes detailed coverage of joint work-study programs as preparation for vocational adequacy, and addition of remedial and compensatory program models. Prerequisite: 400 and one of 401, 402, 403 or 404.

431-3 Work-Study Programs for Adolescents Labeled Severely Disabled. Deals with program offerings in public school special education programs designed to prepare adolescents labeled severely disabled for maximum vocational adequacy. Prerequisite: 400 and one of 401, 402, 404 or 406.

490-1 to 4 Readings in Special Education. Study of a highly specific problem area in the education of exceptional children. Open only to selected seniors. Not for graduate credit. Prerequisite: 400 and consent of department chair.

Speech Communication (SPCM)

Courses in speech communication are listed according to numerical order. However, the second digit in the course number indicates its topical focus in the speech communication curriculum, as follows:

- 00-09 Communication Theory and Research Methods
- 10-19 Rhetorical Theory and Criticism
- 20-29 Oral Communication and Public Address
- 30-39 Communication Education
- 40-49 Language and Semiotic Communication; Cultural Studies
- 50-59 Political Communication; Media Studies
- 60-69 Interpersonal and Phenomenological Communication;
Philosophy of Communication
- 70-79 Performance Studies: Oral Interpretation
- 80-89 Organizational Communication and Public Relations
- 90-99 Research Reporting: Applied Studies and Practicum

100-3 Speech Communication Workshop. A workshop in debate, oral interpretation, or public speaking for secondary school seniors interested in intensive study in one or more of these areas. Prerequisite: consent of instructor.

101-3 Introduction to Oral Communication: Speech, Self and Society. (University Core Curriculum) This course provides theory and practical application relevant to students' development of basic oral communication competencies appropriate to a variety of contexts as situated in a culturally diverse world.

201-3 Performing Culture. (University Core Curriculum) A critical examination of human communication - from everyday conversation to cultural formation - as performance. Lecture and discussion format with consideration of primary texts drawn from conversational transcripts, multicultural literature and popular culture.

221-3 Advanced Public Speaking. The components of effective speech with actual preparation and presentation of several types of speeches. Prerequisite: 101 or consent of instructor.

230-3 Introduction to Speech Communication Theory. Introduction to speech communication theory. Examination of history and theoretical issues as a basis for understanding applied communication areas.

258-1 to 30 Work Experience. Credit given for work experience by students enrolled in the Department of Speech Communication. Such credit is granted upon approval of the undergraduate adviser.

261-3 Small Group Communication. Introduction to small group communication and the small group process. Special emphasis given to problem-solving discussion groups. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirements for speech communication majors.

262-3 Interpersonal Communication II. Theoretical approaches and contemporary research on patterns of interpersonal communication in romantic, friendship, family, and work relationships. Emphasis on developing skills for analyzing interpersonal processes through close description and interpretation. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for speech communication majors. Prerequisite: 101 or consent of instructor.

280-3 Business and Professional Communication. A survey of communication theory pertaining to business and professional settings. Provides practice applicable to interviews, conference briefings, and presentation techniques. Prerequisite: 101.

281-3 Introduction to Public Relations. Philosophies and principles of agency, business, governmental, and nonprofit public relations. Historical perspectives, current and future trends, and career opportunities explored.

301I-3 Communication Across Cultures. (University Core Curriculum) This course provides an introduction to communication between/among people from different cultures, focusing on the application of intercultural communication theory and research. Class assignments and exercises examine everyday encounters with individuals from different races, ethnicity, religions, gender, ages, sexual orientations and physical abilities.

310-3 Speech Composition. Rhetorical techniques of public address. Two major speeches prepared, with every possible refinement. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for speech communication majors. Prerequisite: 221.

325-3 Argumentation and Debate. Through the study of argument, evidence, reasoning, and oral advocacy this course seeks to ensure competence in the ascertainment of truth by investigation and research and the establishment of truth through proof. The ultimate rationale for the course is the discovery and support of intelligent decisions. Prerequisite: 101, 221, 280, or consent of instructor.

326-3 Persuasion. The means of influencing individuals and groups through communication. Emphasizes the shaping of other's values, beliefs, attitudes and behavior primarily by the spoken word. Provides theoretical information about and practice in persuasive speaking, for sources and targets of persuasion. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for speech communication majors.

340-3 Introduction to Language Acquisition. Interdisciplinary approaches to the interaction between language acquisition and communication development. Topics include nonverbal communication, phonology, syntax, semantics, and pragmatics. Provides a background for those working with young children.

341-3 Introduction to Intercultural Communication. (Same as Linguistics 341.) Examination of the elements and structure of intercultural and transracial communication in the United States. Designed to analyze and describe the interaction between social perception and expression as manifest in verbal and nonverbal behavior. Emphasis on the functional communication of minority groups. Prerequisite: 101 or 262 or consent of instructor.

358-3 Political Campaigns and Elections. (See Political Science 318.)

361-3 Nonverbal Communication. Nonverbal factors that influence the communicative interaction among persons. Review research findings and conduct projects germane to nonverbal communication. Readings, discussions, and research projects. Prerequisite: 262 or consent of instructor.

362-3 Communication and Social Process. Introduction to the phenomenology of human communication and social process. Analysis and description of interpersonal communication in the development and operation of human communities. Special emphasis is given to the nature of persons, consciousness, and communication exchange in society.

370-3 Oral Interpretation II. Theory and practice in advanced interpretation techniques, with emphasis on the student as performer. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for speech communication majors. Prerequisite: 201 or consent of the instructor.

371-3 Storytelling and the Oral Tradition. Theory and practice in the art of storytelling with emphasis upon practical application, source materials, and historical and ethnic backgrounds.

381-3 Public Relations in Practice. Application of public theory and principles through training and practice in the development of public relations production skills including message construction and delivery, verbal, nonverbal, and visual production work and special events components. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for speech communication majors. Prerequisite: 281 with a grade of C or better and passage of language skills examination.

382-3 Research Methods in Public Communication. An introductory survey of methods and techniques of audience analysis and public opinion research. Designed especially for public relations specialization. Instruction in the design of research tools, sample selection, interviewing, and the use of the computer for data analysis.

383-3 Interviewers and Interviewing. Planning, conducting, and analyzing interviews with emphasis on roles of interviewer and respondent in professional and organizational communication settings. Study of factors affecting accuracy, openness, and goal attainment in use of interview methods for evaluation and research. Individual and small group projects with selected aspects of interviewing. Prerequisite: 262 or 280 or consent of instructor.

390-1 to 6 Applied Communication. Supervised individual and group performance in various communication arts. Emphasis on the practical application of verbal skills in the following areas: (a) communication education, (b) communication studies, (c) debate, (d) interpersonal communication, (e) organizational communication, (f) performance studies, (g) persuasive communication, (h) public relations. May be repeated for credit up to a maximum of six hours toward degree requirements. Prerequisite: consent of instructor and department adviser.

401-3 Communication Theories and Models. An introduction to theory construction and model utilization in communication research. Critical analysis of existing communication theories in the social sciences as a basis for generating new models. Emphasis on the heuristic nature and function of the language/speech act paradigm in communication studies. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for speech communication major.

411-3 Rhetorical Criticism. Designed to develop the student's ability to criticize public discourse, including speeches, written works and the mass media. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for speech communication majors.

421-3 to 9 (3,3,3) Studies in Public Address. Critical studies of speakers and issues relevant to social and political movements dominant in national and international affairs. A lecture, reading and discussion course. Students may repeat enrollment to a total of nine hours.

430-3 Speech in Elementary Schools. Survey of normal speech development with emphasis on the elementary school years. Concept of speech as skill basic to reading, writing, and spelling. Psychological and sociological variables affecting language as it relates to school learning. Speech experiences supportive of the child's linguistic, intellectual, and social development.

431-3 Speech in Secondary School. Philosophy of speech education, and effective teaching of speech through curricular and extra-curricular work. Prerequisite: twelve hours of speech and consent of instructor.

432-3 Secondary School Forensic Program. Designed to evaluate and plan the proper role of forensics in the secondary school and to prepare the students for their tasks as teachers and administrators in that program. Students enrolled as majors in speech communication with a specialization in communication education must complete this course before enrolling for student teaching. Not for graduate credit. Prerequisite: 325, 201.

433-3 Children's Literature in Performance. Study of children's fiction and poetry through analysis, creative drama, and performance, including solo and group work.

435-3 to 6 (3,3) Topics in Performance Studies. An exploration of advanced theories and techniques for conducting sessions in performance studies. Topics vary and are announced in advance. Students may repeat enrollment in the course, since the topics change. Lecture, discussion, class projects, school visitations.

440-3 Language Behavior. Study of linguistic approaches to speech communication based on behavioral determinants such as culture, history, speech community, value orientations, social perception and expression, and the nature and function of interpersonal transaction. Prerequisite: 340 or consent of instructor.

441-3 Intercultural Communication. Application of semiotic and cultural theories to language behavior. Emphasis on speech communication as an approach to the study of intercultural communication. Prerequisite: 341 or consent of instructor.

442-3 Psychology of Human Communication. Nature, development, and functions of verbal and nonverbal behavior; application of psychology theories and research to the communication process in individuals and groups. Emphasis on the systemic nature of communicative behavior.

443-3 General Semantics. Formulations from the works of Alfred Korzybski and from neo-Korzybskian interpreters are presented. General semantics is discussed as an interdisciplinary approach to knowledge. Relationships are made to contemporary problems in human affairs.

444-3 Studies in Language Acquisition. Research in and theories of the development of verbal and nonverbal language with attention to the maturational process. Includes investigation of social, phonological, syntactical, and semantic correlates of communication development. Appropriate for advanced students interested in working with or conducting research involving children.

445-3 Conversational Performance. Analysis of performance acts within everyday interaction: stories, jokes, laughter, teasing, etc. Application of theories of play, metacommunication and framing. Re-performance of recorded, transcribed conversations as method of exploring aesthetic dimensions of communication. Prerequisite: 9 hours of SPCM courses or consent of instructor.

446-3 Sociology of Language Discourse and Signs. Introduction to sociological semiotics, especially structuralism and post-structuralism. Reference to French theorists such as Barthes, Baudrillard, Bourdieu, Certeau, Deleuze and Guattari, Greimas, Group Mu, Lacan, Lyotard, and Perelman. Emphasis on the practice of discourse, language, and signs as a model for research in the human science of communicology.

451-3 Political Communication. (Same as Political Science 418.) A critical review of theory and research which relate to the influence of communication variables on political values, attitudes, and behavior. Prerequisite: 358 or consent of instructor.

452-3 Interpersonal Communication and the Mass Media. A review, synthesis, and analysis of communication theory and research which deals with the process, interactive nature of interpersonal, and mass channels of communication. Prerequisite: 401 or consent of instructor.

460-3 Small Group Communication: Theory and Research. A critical examination of small group theory and research in speech communication. Emphasis is given to the development of principles of effective communication and decision-making in the small, task-oriented groups. Prerequisite: 261 or consent of instructor.

461-3 Laboratory in Interpersonal Communication I. Interpersonal communication is studied as human encounter. The philosophy and theoretical bases of existential phenomenological approaches to human communication are discussed. Projects are evolved by small groups that contribute to the understanding of human communication.

462-3 Laboratory in Interpersonal Communications II. Various theories of social and cultural change are explored. The role of interpersonal communication in the development of human consciousness is explicated. Projects are evolved by small groups that examine values and priorities of human nature and cultural nature.

463-3 Interpersonal Conflict. Study of sources, patterns, and outcomes of conflict in interpersonal relationships. Emphasis on interactive, systems-level analysis of naturally-occurring conflict episodes. Practice in managing conflicts, reframing, negotiation, and mediation. Prerequisite: 262 or consent of instructor.

465-3 Philosophy of Language. (See Philosophy 425.)

471-3 Prose Fiction in Performance. Study of prose fiction through analysis and individual performance. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for speech communication majors. Prerequisite: 370 or consent of instructor.

472-3 Poetry in Performance. The study of poetic form through analysis and performance. Prerequisite: 201, 370 or consent of instructor.

474-3 Staging Literature. Theory and practice of staging literary texts with emphasis on adaptation and directing. Prerequisite: 370 or 371 or consent of instructor.

475-3 to 6 (3,3) Production Texts and Contexts. Advanced study related to theoretical and practical issues in performance staging with special emphasis on textual production, scripting, social contexts and performance practices. May be repeated for a total of six hours. Prerequisite: 6 hours of performance studies courses or consent of instructor.

476-3 Writing as Performance. An examination of the practical and theoretical links between composition and performance. Lectures, reading and assignments focus on performance as a means and an end to creative writing. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for speech communication majors.

480-3 Dynamics of Organizational Communication. Introduction to interrelationships of communicative behavioral and attitudes with organizational policies, structures, outcomes. Uses case studies and role-plays to teach principles. Individual research into selected aspects of organizational communication. Prerequisite: 280, 442, or consent of instructor.

481-3 Public Relations Cases and Campaigns. Advanced course in public relations case analysis and campaign planning. Students critique public relations campaigns created by various profit, nonprofit and agency organizations. Students also design public relations campaigns from problem identification through evaluation stages. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for Speech Communication majors. Prerequisite: 381 and 382 with a grade of C or better.

483-3 Studies in Organizational Communication. Study of communication systems and behaviors within organizations. Consideration of relevance of communication to management operations, employee morale, networks, superior-subordinate relations, production, and organizational climates. Individual research into selected aspects of organizational communication. Prerequisite: 480 or consent of instructor.

490-1 to 6 Communication Practicum. A supervised experience using communication skills. Emphasis on the development of performance skills in the following areas: (a) Communication studies. (b) Performance activity. (c) Interpersonal communication. (d) Debate and forensic activity. (e) Political communication. (f) Organizational communication. (g) Instructional communication. May be repeated for credit. Undergraduates limited to a total of six hours and graduate students to three to be counted toward degree requirements.

491-1 to 3 Independent Study in Communication. Readings, creative projects, or writing projects focusing on a theoretical study of communication. The independent study should normally be completed in one semester under the tutorial supervision of a faculty sponsor. Not for graduate credit. Prerequisite: twelve hours of speech, consent of instructor and departmental adviser.

492-2 to 8 Workshop in Performance Studies. Summer offering concentrating in specialized areas of performance studies. Prerequisite: 201 and 370 or consent of instructor.

493-3 to 9 (3,3,3) Special Topics in Communication. An exploration of selected current topics in communication arts and studies. Topics vary and are announced in advance; both students and faculty suggest ideas. Students may repeat enrollment in the course, as the topic varies.

494-1 to 6 Internship in Public Relations. A supervised experience using public relations skills in a professional or career setting. Maximum of six hours to be counted toward degree requirements. Not for graduate credit. Prerequisite: consent of instructor. Mandatory Pass/Fail.

Theater (THEA)

101-3 Theater Insight. (University Core Curriculum) Through lectures, discussions, projects, text readings and written critiques, students examine how plays are written and produced and how these plays reflect the people and cultures that produce them.

203-3 Introduction to Voice and Movement. Fundamentals of vocal production and movement for the stage: breathing, phonation, kinesthetic awareness, warm-up, use of space and introduction to the International Phonetic Alphabet.

205-2 Stage Make-up. Theory and technique of various types of make-up. Supplies, at least \$25 per semester.

217-3 Acting. Preparing the actor's instrument through Stanislavskian technique; concentration/relaxation exercises; improvisations. The course objective is the discovery and development of the actor's inner resources. Contemporary American plays are studied from the actor's point of view.

218-9 (3,3,3) Beginning Stagecraft. (a) Fundamentals of scenic construction and stage rigging and fundamentals of stage lighting including basic tools, equipment, handling, focusing, and maintenance and basic techniques of constructing and handling stage costume. (b) Basic investigation of stage lighting design, theory, and professional practice. Special attention will be focused on color theory and its application to stage lighting. (c) Basic techniques of constructing and handling stage costume.

260-1 to 15 Internship. Off-campus internship which is related to the major program but not part of a regular instructional course. Written reports are required of student and supervisor. Prerequisite: theater major; written proposals must be approved by undergraduate adviser and curriculum committee prior to internship. Mandatory Pass/Fail.

300-1 to 4 (1 per semester) Theater Practicum. Offers students an opportunity to increase their skills in stagecraft, stage lighting, and costumes by working on department productions. Prerequisite: 218a,b, or c.

303A-3 Movement for the Actor. Intermediate studies in stage movement. Prerequisite: 203 and 217.

303B-3 Voice for the Actor. Intermediate studies in stage voice, IPA, standard speech, text analysis, scansion, cold readings. Prerequisite: 203.

309-3 Drafting for the Theater. Development of the student's skill in scenographic techniques including ground plans, sections, elevations, and detail construction drawings. Prerequisite: 218a or concurrent enrollment.

311A-3 Play Analysis. Development of basic skills in play analysis and application of these skills to a variety of dramatic forms through class discussions and written assignments. Satisfies CoLA Writing-Across-the-Curriculum requirement for Theater majors. Prerequisite: 101 or one course in dramatic literature.

311B-3 to 6 Playwriting Workshop for Actors. Practical experience in acting in original plays combined with class discussions and critiques. Actors attend class sessions as well as rehearsals and have their work progressively evaluated. Six credit hours are awarded for the more intensive workshop sessions in the summer while three credits are available during the academic year. Workshop productions are staged in cooperation with 511. Prerequisite: audition.

317-6 (3,3) Intermediate Acting. (a) The study and application of various theories of the acting process. Coursework includes monologue and scene work. Prerequisite: 217. (b) The study and application of Shakespeare in the development of the actor's process. Prerequisite: 317a and consent of instructor.

322-1 to 12 SIUC Summer Theater. Practical experience in summer stock play production. A maximum of twelve credit hours may be accumulated for performance or technical work in SIU Summer Theater only. Open to majors or non-majors. Prerequisite: audition or consent of instructor.

323-1 to 6 Practicum for Non-Majors. Practical experience in non-performing production areas for non-majors. Up to six hours may be taken at one time. This course may not be applied to a major in theater. Prerequisite: audition or consent of instructor.

350-3 to 9 (3 per topic) Topical Seminar. An intensive examination and application of selected areas of interest. Topics will vary and may include such areas as stage management, audition and interview, current political theater. Prerequisite: consent of instructor.

354-6 (3,3) History of the Theater. (a) Theater history from primitive times to the 17th century. (b) Theater history from the 17th century to the present.

390-1 to 6 Independent Study. Independent work on selected problems in academic or blend of academic and creative research. A maximum of three hours may be taken for a single project and a cumulative maximum of six hours may count toward the degree. Prerequisite: majors only; written proposals; consent of undergraduate adviser and instructor.

400-1 to 6 (1 to 2 per semester) Production. Practicum for support of major department productions in all areas. Roles in department productions may fulfill requirement.

401-2 to 6 (2 per semester) Stage Management. Study and practical application of the theories and skills required to successfully stage manage a theater production. Students will fulfill stage management assignments in departmental productions. Prerequisite: 218a and consent of instructor.

402-6 (3,3) Play Directing. (a) Introduction to directing. The history of the director; the evolution of the director into a position of predominance in modern theater hierarchy. The function of the director; and examination of theoretical viewpoint. Textual analysis; establishing the groundwork for the director's approach to production. Prerequisite: junior standing; 217 and 311a; or consent of instructor. **(b)** The principles of play direction including play selection, analysis and patterning of auditory and visual elements of production. Directing of a one-act play. Prerequisite: consent of instructor.

403A-3 Advanced Movement for the Actor. Advanced studies in stage movement with special attention to period styles. Prerequisite: 303a, 317a, 317b.

403B-3 Advanced Voice for the Actor. Advanced studies in voice with special attention to stage dialects. Prerequisite: 303b, 317a.

404-3 Theater Management. Discussion of legal and financial aspects concerning the professional and community theaters of the United States. Consideration of and practice in managerial activities of an educational theater including administration, purchasing, and accounting practices, direct sales, publicity, promotion and public relations.

406-3 Properties and Crafts for the Stage. Studio work in traditional and non-traditional crafts for theatrical events, including life masks, upholstery, puppetry, stage furniture and special effects.

407-3 Scene Design. Technical and artistic aspects of scene design. Theory and practice. Supplies at least \$25 per semester. Prerequisite: 218a, 309, 409, or consent of department.

408-3 Model Making. The craft of scenic model making for the stage and other dramatic media. Prerequisite: 218a or consent of department.

409A-3 Scene Painting. Studio work in lining, paneling, tromp l'oeil ornament and drapery. Prerequisite: 218a or consent of department.

409B-3 Advanced Scene Painting. Advanced studio work in scene painting, including dye painting, transparencies, color mixing and mural work. Prerequisite: 409a or consent of instructor.

410-3 Children's Theater. Study of methods and their practical application of introducing children to theater and theatrical productions as an art form. Practicum with the Touring Youth Theater is an important part of the course.

411A-3 Playwriting — The One-Act Play. Principles of dramatic construction and practice in the writing of two one-act plays. Problems of adaptation are treated. Individual plays have the opportunity to be produced in the theater's program for new plays. Prerequisite: one course in dramatic literature for non-majors and graduates; 311a for undergraduate theater and speech communication majors; or consent of instructor.

411B-3 Playwriting — The Full-Length Play. Principles of dramatic construction and practice in the writing of a full-length play, encompassing such varied types as the children's play, the musical, the outdoor historical drama, etc. In special cases, students may elect to write two short plays. Prerequisite: 411A or consent of instructor for non-majors; 311a for undergraduate theater majors.

414-3 Costume Design. History of western costume from Greek to Renaissance and its adaptation to stage use. Theory and practical application of design and color. Supplies at least \$25. Prerequisite: 218c or graduate standing.

417-3 to 6 (3,3) Advanced Acting. Utilization of the actor's process in the performance of European realism and various theories and styles of the Twentieth century. May be repeated once for credit. Prerequisite: 317b.

418-3 Introduction to Lighting Design. Investigation of stage lighting design, theory, and professional practice. Special attention to color theory and its application to stage lighting. Four hours lecture/laboratory. Prerequisite: 218b, graduate standing, or consent of instructor.

419-3 Advanced Stagecraft. Advanced study of principles and procedures of scenic construction and stage rigging. Includes scene shop organization, materials, and specialized stage equipment; preparation for professional technical direction. Lecture and laboratory to be arranged. Prerequisite: 218a,b, 309, 407; or graduate standing.

450-3 to 9 Topical Seminar. An intensive examination and application of selected areas of interest. Topics will vary and may include such areas as stage management, audition and interview, current political theater. Prerequisite: consent of instructor.

454-3 American Theater. The development of American theater from colonial times to the present. Includes a study of the American musical theater from preminstrels through contemporary music-drama.

Tool and Manufacturing Technology (TT)

101-1 to 6 Basic Tool and Manufacturing Laboratory. The student will perform the basic operations covering the drill press, engine lathe, shaper, and basic bench work operations involving layout and hand tools. The operation of the shaper as a unit production machine is covered. Laboratory five to fifteen hours. Student will pay shop supply charge of \$1.50 per semester hour.

102-1 to 6 Milling Machine and Grinding Laboratory. The student will demonstrate ability to set up and operate the various milling machines and grinding machines common to the tool room and manufacturing operations. Laboratory five to fifteen hours. Student will pay shop supply charge of \$1.50 per semester hour. Prerequisite: 101 or consent of instructor.

125-1 to 3 Introduction to Machine Tools. The student will demonstrate his knowledge of the basic machine tool operations; also, bench and hand tool techniques. Lecture one to three hours.

126-3 Machinability of Metals, Milling, and Abrasive Machining. Students will demonstrate ability to select correct cutting speeds, feeds, and tool geometry for various alloy steels and to understand the relationship of the factors involved. They will be required to understand the various tool room and production milling machine and grinders; their construction, set-up, and operations. Lecture one to three hours. Prerequisite: 125 or consent of instructor.

180-3 Oxy-Acetylene and Elementary Arc Welding Procedures. Includes theory and practice of oxy-acetylene fusion welding, cutting, hard soldering, and introductory shielded metal arc welding with emphasis on flat and horizontal positions. Students will pay materials charge in the amount of \$1.50 per credit hour. Lecture one hour. Laboratory four hours.

181-3 Intermediate Arc Welding and Elementary Inert Gas Welding. Includes theory and practice of intermediate shielded metal arc welding with emphasis on vertical and overhead positions and an introduction to gas tungsten arc, gas metal arc, cored wire welding, and arc/air cutting procedures. Students will pay materials charge in the amount of \$1.50 per credit hour. Lecture one hour. Laboratory four hours.

182-3 Advanced Shielded Metal Arc Welding Procedures. Includes theory and practice of gas, tungsten arc, gas metal arc, cored wire welding. Major emphasis will be placed on the preparation of weld specimens for destructive testing and subsequent analysis of the weldment. Student will pay materials charge in the amount of \$1.50 per credit hour. Lecture one hour. Laboratory four hours. Prerequisite: 181 or consent of instructor.

183-2 Welding Blueprint Reading. Emphasizes the basic fundamentals of drawing interpretation as applied to welding and metal fabrication. The student will be expected to develop a core of blueprint reading skills in addition to a thorough familiarization of welding symbols and their significance. Through individualized instruction, students will progress at their own rate until course requirements have been satisfied as certified by the supervising faculty member.

185-3 Technical Sketching/Blueprint Reading. Upon completion of this course, the student should be able to read and sketch pictorial and multiview drawings which include auxiliary views, sectional views, assemblies, weldments, up-to-date types of precision dimensioning, and many types of fasteners and machine elements. Lecture one hour. Laboratory four hours.

186-3 Computer Aided Design Drafting. Upon completion of this course, the student should be familiar with basic computer operation and keyboard functions; be able to design and develop three dimensional drawings of tools, parts, drill jigs and fixtures. Lecture one hour, laboratory three hours. Prerequisite: 185 or consent of instructor.

199-1 to 10 Individual Study. Provides first-year students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor and department chair.

208-3 C.N.C. Programming. The student will be introduced to the concepts and principles involved in controlling machine tool motion by computer. Emphasis on application of the microcomputer to numerical control programming and tool path simulation; to demonstrate their ability to program Computer Numerical Control machine tools using manual input. Lecture two hours, laboratory two hours. Prerequisite: 102 and 105b or consent of instructor.

210-1 to 7 Tool and Die and Electrical Discharge Machining. The student will construct blanking die, form die or special tooling. He/she will be introduced to punch press operations, electrical discharge machining, and machining precision parts utilizing various machine tools. Shop supply fee of \$2 per credit hour. Prerequisite: 102 or consent of instructor.

211-1 to 7 Advanced C.N.C. and Tool and Die. The student will demonstrate their ability to set-up and operate Computer Numerical Control machine tools; to use Computer Aided Manufacturing software to establish tool requirements and offsets for the generating of machine tool programming code in order to produce matching components for a progressive, compound, forming, or moulding die; to expand skills in machine tool operations. Laboratory fifteen hours. Student will pay shop charges of \$2 per credit hour. Prerequisite: 102 or consent of instructor.

220-3 Tool and Die, E.D.M. and Inspection Practices. The student will be introduced to basic die design and die components in relationship to blanking and forming dies; to understand the E.D.M. process and to select proper machine settings for a given application; and to understand inspection practices and precision measuring procedures in the manufacturing industry. Lecture three hours. Prerequisite: 126 or consent of instructor.

221-3 C.A.M. and Production Machining. The student will be introduced to the use of Computer Aided Manufacturing software to select tool requirements, simulate tool path, generate machine tool programming code, and subsequently produce finished parts on the Computer Numerical Control lathe and milling machine; to understand the theories and principles involved in production machining in the computer integrated manufacturing environment. Prerequisite: 220 or consent of instructor.

225-2 Principles and Processes in Modern Manufacturing. This is an introduction to the principles involved, and the materials used in modern manufacturing. Emphasis will be on analysis and comparison of several processes relating to the Tool and Manufacturing field. Special attention is given to new technological advances related to the modern machine tool industry, including CAD, CAM, CIM and plastics production.

230-2 to 7 Tool Design I. Tool design practices with emphasis on jigs, fixtures, and gages. Students will develop concepts and prepare working drawings of production tooling with particular emphasis on manufacturing sequence, quality control, and utilization of standard components. Laboratory 3 to 10 hours. Material and supply cost \$.75 per credit hour. Prerequisite: 186 or consent of instructor.

231-2 to 7 Tool Design II. Die design practices with emphasis on blanking, piercing, compound, and forming dies. Students will develop design concepts and prepare working drawings of dies in accordance with die design standards and utilization of standardized die components. Laboratory 3 to 10 hours. Material and supply cost \$.75 per credit hour. Prerequisite: 230 or consent of instructor.

240-3 Fundamentals of Jig, Fixture and Gage Design. A study of the principles involved in developing appropriate tool design concepts. Such factors as processing sequence, clamping techniques, locating devices, and dimensional tolerances will be studied with appropriate considerations given to such factors as tool costs, quantity production, machine selection and operator safety. Lecture three hours. Prerequisite: 186 or consent of instructor.

241-3 Fundamentals of Die Design. A study of the principles involved in the use and design of dies used for the fabrication of sheet metal parts in punch press. Emphasis will be on blanking, piercing, compound, and forming dies. Such factors as drafting room standards, die design standards, punch press capacity, and the use of standardized and interchangeable components will be studied in keeping with desirable levels of manufacturing costs and product quality. Lecture three hours. Prerequisite: 240 or consent of instructor.

275-2 Ferrous Metallurgy. The student will demonstrate understanding in the theory of alloys, characteristics of metals, simple phase diagrams and basic heat treating practices. Lecture two hours.

276-2 Tool Steel Metallurgy. Students will demonstrate ability to apply heat treating procedures with tool steel common to industrial uses. They must also be able to select the proper steel for the design criteria. Lecture one hour. Laboratory two hours. Prerequisite: 275 or consent of instructor.

299-1 to 16 Individual Study. Provides students with opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor and department chair is required.

310-3 to 24 Welder Qualification. Students may choose a concentrated area of training such as pipe welding or structural welding of carbon steel, alloy steel, stainless steel, and aluminum. They may choose any one or all of the following welding processes: shielded metal arc, gas metal arc, gas tungsten arc, and cored wire welding. Upon completion of this course, the student should have developed skills required for pressure and nuclear piping fields, structural steel and bridge welding. Qualification is determined through visual inspection and mechanical testing according to ASME or AWS code requirements. Through individualized instruction, students will progress at their own rate and may complete instruction at any time depending upon individual progress. Qualification papers will be completed by the College of Applied Sciences and Arts and presented to the student or forwarded to an employer. A student will pay \$1.50 per semester hour lab fee. Lecture Lab six hours per three credit hour load. Prerequisite: 182 or graduate of an approved welding program or consent of coordinator.

319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

320-1 to 12 (1 to 4 per topic) Advanced Tool and Manufacturing Studies. Provides students with an opportunity for advanced studies in their areas of interest in tool and manufacturing technology. Emphasis will be on literature search and advanced technical skills development in the student's areas of specialization. (a) Machine tool, i.e., numerical control programming, advanced diemaking, process planning, machinability studies. (b) Metal fabrication, i.e., design of welded structures, metallurgical aspects of welding, welding quality control procedures. (c) Tool design, i.e., plastic mold design, interchangeable die components, tooling for automatic processes. Students will develop written project objectives with the assistance of a sponsoring faculty member and submit a final paper detailing the semester's activities. Shop and supply charges to be individually determined and specified in project objectives. Credit to be individually arranged based on the nature and complexity of the project. Prerequisite: associate degree in tool and manufacturing technology or consent of instructor.

321-1 to 6 Computer Aided Die Design. This an introduction to the principles involved in advanced die design and production tooling. Emphasis will be on progressive dies, deep draw dies, forging dies, plastic injection molding dies, trim dies, and steel rule dies. Prerequisite: AAS degree in approved technical area or consent of coordinator.

322-1 to 6 Complex Die Making. This course will provide instruction in the high degree of precision skills required for complex die making. Emphasis will be on programming CNC machine tools to produce interchangeable complex die sections. Prerequisite: AAS in approved technical area or consent of coordinator.

323-1 to 6 Computer Integrated Manufacturing. This course will provide instruction with the manufacturing work cell. This will enable the student to design and build appropriate tooling to process raw material through a manufacturing line to produce a completed part fully automated. To accomplish this, the computer, robot, rotary table, conveyor, and CNC mill are programmed to complete the manufacturing process. Prerequisite: AAS in approved technical area or consent of program coordinator.

350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions and health service occupations offered through various workshops, special short courses and seminars. Hours and credit to be individually arranged. This course may be classified as independent study. Prerequisite: consent of instructor.

University (UNIV)

001-1 to 6 (1 per year) Student Volunteer Community Service. Provides university students an opportunity to participate in community service activity. A maximum of one semester hour of credit may be awarded per year for thirty hours or more of community service. Credit may not be used for graduation or toward semester eligibility for athletics, financial aid, student loan status or University honors. Grade of CR only.

University Honors Program (UHON)

111-3 Freshman Honors Colloquium. Open to freshmen. Prerequisite: consent of director of University Honors Program.

301-3 to 9 (3 per topic) Honors Seminar. Open to undergraduates. Topics vary and will be announced by the University Honors Program each time the course is offered. Prerequisite: consent of the director of University Honors Program.

351F-3 to 9 (3 per topic) Honors Seminar in Fine Arts. Topics vary and will be announced by the University Honors Program each time the course is offered. These seminars may be used to satisfy the University Core Curriculum requirement for disciplinary studies in fine arts. Prerequisite: consent of the director of University Honors Program.

351I-3 to 9 (3 per topic) Honors Seminar in Interdisciplinary Studies. Topics vary and will be announced by the University Honors Program each time the course is offered. These seminars may be used to satisfy the University Core Curriculum requirement for interdisciplinary studies. Prerequisite: consent of the director of University Honors Program.

351L-3 to 9 (3 per topic) Honors Seminar in Human Health. Topics vary and will be announced by the University Honors Program each time the course is offered. These seminars may be used to satisfy the University Core Curriculum requirement for disciplinary studies in human health. Prerequisite: consent of the director of University Honors Program.

351M-3 to 9 (3 per topic) Honors Seminar in Multicultural Diversity in the United States. Topics vary and will be announced by the University Honors Program each time the course is offered. These seminars may be used to satisfy the University Core Curriculum requirement for Integrative Studies in Multicultural Diversity in the United States. Prerequisite: consent of the director of University Honors Program.

351O-3 to 9 (3 per topic) Honors Seminar in Social Science. Topics vary and will be announced by the University Honors Program each time the course is offered. These seminars may be used to satisfy the University Core Curriculum requirement for disciplinary studies in social science. Prerequisite: consent of the director of University Honors Program.

351S-3 to 9 (3 per topic) Honors Seminar in Science. Topics vary and will be announced by the University Honors Program each time the course is offered. These seminars may be used to satisfy the University Core Curriculum requirement for disciplinary studies in science. Prerequisite: consent of the director of University Honors Program.

351U-3 to 9 (3 per topic) Honors Seminar in Humanities. Topics vary and will be announced by the University Honors Program each time the course is offered. These seminars may be used to satisfy the University Core Curriculum requirement for disciplinary studies in humanities. Prerequisite: consent of the director of University Honors Program.

399-1 to 15 Honors Project. Preparation of honors paper or comparable project under joint supervision of a faculty member in appropriate discipline and director of University Honors Program. Prerequisite: consent of the director of University Honors Program.

499-3 to 9 Undergraduate Honors Thesis. Preparation of Honors thesis or comparable project under supervision of a committee consisting of one or more faculty members in appropriate disciplines and director of University Honors Program. Not for graduate credit. Prerequisite: consent of the director of University Honors Program.

Women's Studies (WMST)

101-3 Classical Civilization. Same as Foreign Languages and Literatures 101 (University Core Curriculum) A survey of classical civilization from the Minoans to the Roman Empire with three foci: Homeric and Classical Greece, and the Roman Experience as seen by its artists.

201-3 Multicultural Perspectives on Women. (University Core Curriculum) This survey will cover important issues within women's studies in the United States and will be interdisciplinary and multicultural in nature. The topics will include language, media, education, family, labor, politics, literature and the arts. Issues of race, class, gender and culture will consistently be examined within each topic.

221-3 The Sexes in the Modern World: The Social Science Perspective. (See Sociology 223.)

225-3 Women in Literature. (See English 225.)

230-3 Classical Mythology. Same as Foreign Languages and Literatures 230 (University Core Curriculum) An inquiry into the nature of myth and its relevance today while studying selected myths principally of the Greeks and Romans.

286-3 Marriage and Family Living. (See Curriculum and Instruction 227.)

326-3 Women in Communications and Fine Arts.

341-3 Psychology of Women. (See Psychology 333.)

347-3 Women in American History. (See History 368.)

348-3 Women in European Society 1600 to Present. (See History 324.)

352-3 Images of Women in French Literature. (See French 300.)

427-3 Women in the Visual Arts. (See Art and Design 457.)

442-4 Sociology of Gender. (See Sociology 423.)

445-3 Women and the American Political Process. (See Political Science 429.)

454-3 to 6 Topics in Women's Literature. (See English 496.)

456-3 Philosophical Perspectives on Women. (See Philosophy 446.)

463-2 Greek Literature in Translation. (See Classics 405.)

476-3 Women and the Criminal Justice System. (See Administration of Justice 460.)

488-3 Women in the Home and Labor Market. (Consumer Economics and Family Management 480.)

490-1 to 6 Readings. Supervised readings in selected content areas of women's studies. Prerequisite: consent of instructor and women's studies coordinator.

491-1 to 6 Special Topics. Concentration on a topic of interest not offered through the regular course listings. Prerequisite: consent of instructor and women's studies coordinator.

492-3 to 6 Seminar in Women's Studies. A synthesizing experience required of seniors completing a minor in women's studies. Activity may include, but is not limited to, the preparation and presentation of a scholarly paper or the conduct of a research project. Prerequisite: 221, senior standing, and consent of women's studies coordinator.

493-2 to 6 Individual Research. Exploration of a research project under the supervision of a faculty member having graduate faculty status. The project must result in a written research report which is filed with the coordinator of women's studies. Prerequisite: consent of instructor and coordinator of women's studies and senior standing.

494-1 to 6 Practicum. Supervised practical experience in situations centering on women's issues, organizations, services, etc. The setting may be in one's own field of study or in the general content areas recognized in the women's studies program. Prerequisite: consent of instructor and coordinator of women's studies.

Workforce Education and Development (WED)

258-1 to 30 Work Experience. Credit granted for past work experience while employed in business, industry, labor, government service or military organizations. Credit determined by departmental evaluation. Prerequisite: Completion of 12 semester hours of WED courses with C or better.

259-1 to 60 Occupational Training. Credit for documented occupational study in accredited and selected other programs. Credit determined by departmental evaluation. Prerequisite: Completion of 12 semester hours of WED courses with C or better.

202-3 Business Communications. (Same as Management 202.) Creating and managing written and oral administrative communications including the analysis, planning and practice of composing different types of internal and external communications in various administrative and business contexts. To successfully complete this course, a communication competency examination (additional fee required) must be passed with at least 70% accuracy prior to University course drop date. Prerequisite: English 101 and 102 or equivalent.

306-3 Introduction to Computers and Information Systems. An overview of computer technology and uses of information systems in education and the business. Hands-on applications with business and educational software is stressed. An introduction to programming languages is incorporated using the BASIC language.

310-3 Introduction to Business Education. Teaching business in public and private schools and business and industry training. Curriculum structures, philosophical bases, student characteristics, employment requirements and career opportunities.

320-2 Home Economics as a Profession. Social, psychological and philosophical interpretation of home economics in today's world. Overview of career areas, the homemaker-professional worker and vocational and occupational home economics programs.

321-2 Methods of Teaching for Non-Teaching Majors. Educational principles for use in situations mostly outside of the formal classroom. Selection and organization of materials. Practice in using a variety of techniques and teaching aids.

322-2 Curriculum in Home Economics. Curriculum planning for the total home economics program. Includes management of student organizations and business of a department. Prerequisite: Education 315.

324-4 History, Development and Principles of Extension Work. History and philosophy of cooperative extension. Principles and practice of organizing and administering extension work in home economics. Offered alternate years. Transportation expense for field trips required.

327-3 Home Economics for Men and Women. Survey of areas of home economics; child care; personal, family and community relations; economics and management of personal and family resources; food; nutrition; clothing selection and buying; financial management; consumer education and protection. Emphasis on life skills as reflected in needs of students. Field trip and practicum experiences. Cost: \$3 for supplies.

334-3 Careers in Fashion. Explores the wide range of careers in the fashion industry from design, to production, to distribution and ultimate consumer of fashion goods. Field trips.

335-2 Basic Textiles. Emphasis on recognition of fabrics and weaves, suitability, care, and maintenance, especially household textiles. Credit cannot be earned for 335 after receiving credit for 345a.

336-3 Survey of Clothing. Multidisciplinary overview of study of clothing. Course includes aesthetic, cultural, economic, psychological, social and anthropological aspects.

337-3 Clothing for Consumers. Clothing needs of individual family members within the context of developmental stage, life style, and societal setting; functional and fashion-motivated needs considered; clothing budgeting. Prerequisite: 336.

338A-3 Clothing Construction – Beginning. Basic clothing construction laboratory. Beginning skills: use of machine, fabric selection and preparation, pattern alteration, garment construction.

338B-3 Clothing Construction – Intermediate. Intermediate skills in fitting, construction, and pattern and fabric usage. Prerequisite: 338A.

340-3 Flat Patternmaking and Drafting. Drafting and fitting basic patterns; making sloper; making styles through flat pattern manipulation and drafting; testing and refining patterns to provide perfect fit. Prerequisite: 338b.

341-3 (1,1,1) Fashion Retailing Seminars. Comparison of practices drawn from student work experiences and information from readings or resource people. Individual and group projects. (a) Retail Theft, (b) Personnel, (c) Fashion Business Systems. Prerequisite: 100 clockhours of approved retail experience.

342-3 Draping. Application of draping principles and techniques to create original garment designs. Prerequisite: 338b.

343-3 Apparel Accessories. Product knowledge, levels of quality, selling points, care of plastics, leather goods, furs, jewelry, cosmetics.

344-3 Fashion Illustration. Original designs for male and female apparel and accessories using various media. Designs based on various sources of inspiration.

345A-3 Textiles - Lecture. Aspects of textiles having an influence on properties and performance of textiles and use products such as apparel and home furnishings. Characteristics of fibers, yarns and fabrics will be discussed and other factors such as manufacturing methods and legal constraints on the textile industry.

345B-1 Textiles - Laboratory. Investigation of fiber, yarn and fabric construction properties that influence textile performance. Prerequisite: concurrent enrollment in 345a.

346-3 Visual Merchandizing. Basics of apparel merchandise presentation using fashion shows, window displays, point-of-purchase displays, and mass merchandise presentations emphasizing the elements of design, lighting, and fixture/prop concepts.

347-3 Fashion Motivation. Psychological motivation for wearing clothing; societal functions of clothing, cultural differences in dress. Prerequisite: 336.

348-3 Tailoring. Basic principles of tailoring applied to coat or suit. Prerequisite: 338B.

349-3 Fashion Merchandising. Philosophies, principles and procedures used in fashion retailing establishments as they relate to functions, organization and operations. Topical coverage also includes merchandise and expense planning, inventory management and personnel training. Prerequisite 337.

350-3 Retail Fashion Buying. Responsibilities of a fashion retail buyer. Includes information sources, determination of consumer needs, characteristics of a buyer. Prerequisite: 336, 341-1.

381-4 (2,2) Training Proposal and Report Writing. (a) Theoretical and applied, guided self-study development of skills necessary to developing and documenting occupational study and experiences via resumes and related employment search correspondence. (b) Principles and practices of preparing training proposals and reporting results in corporate or agency settings.

384-3 Adult Education and Training. Planning and preparing adult and workforce programs. Characteristics of clientele, financial support, program development.

386-3 (1,1,1) Post-Secondary Work Education. Teaching in work education programs in post-secondary institutions and agencies. (a) Orientation to and preparation for teaching occupations, (b) Situations and issues which arise in professional education, (c) Interpersonal relations in teaching and other assignments.

395-1 to 24 Field Experience. Supervised work experience in a departmental approved position in business, industry, labor, government or military organizations for students specializing in (a) Administrative services training, (b) Business education, (c) Education, training and development, (d) Home economics, (e) Vocational teacher development or (f) Clothing and textiles. Clock hours/credit arranged by department coordinator.

398-1 to 3 Special Problems. Independent study for qualified students in (a) Administrative services training, (b) Business education, (c) Education, training and development, (d) Home economics, (e) Vocational teacher development or (f) Clothing and textiles. Prerequisite: consent of instructor.

401-3 Authoring Computer Based Instruction in Workforce Education. Develops the basic practical skills and theoretical knowledge required to create computer based instruction for workforce education. Planning and developing CBT lessons are included.

408-3 Integrating and Managing Technology Applications for Workforce Education and Training. Design of workforce training applications integrating professional advanced features of computer software, communication technologies and multimedia features, including management of educational LAN systems. Prerequisite: 306.

409-3 Applications of Integrated Software for Education. Computer applications of integrated software. Spreadsheet, database, wordprocessing and graphic and communications software will be applied to the solution of related problems. Individual student projects will be the focus of the applied nature of the class. Not of graduate credit. Prerequisite: 306 or Office Systems and Specialties 100, or equivalent.

410-3 Issues in Business Training/Education. Study of current issues in business training and education related to history, current status and trends. Organization of instruction, instructional settings, relation to general education, integration and impact of technology, curriculum development/review and evaluation of business training/education impact in the workplace.

412-3 Office Systems Planning and Implementation. (Same as Office Systems and Specialties 412) Planning for office systems development through investigation of procedures and systems used in various types of offices. Study of work flow, information processing, employee and group interactions, office information systems from end user perspective. Study of development and implementation processes and strategies detailed through field-tested projects. Students enrolled for graduate credit will develop an end-user office support system as a result of the project. Prerequisite: Office Systems and Specialties 341.

415-7 (1,1,1,1,1,1) Instructional Methods for Business Education. Specific methods, techniques and materials to deliver instruction in the business education areas of (a) Accounting, (b) Basic business and marketing, (c) Computer systems, (d) Keyboarding, (e) Information processing, (f) Shorthand, (g) Employability skills. Prerequisite: 310, 462 or Education 315.

417-3 Administrative Office Communications. Application of communication theory, human relations concepts, research methods and information technology to professional application of automated information systems. Projects include oral and written reports, systems-related documents (reports, proposals and procedures) and system documentation for users; emphasis on human factors of communication in a technological environment. Prerequisite: 302 or equivalent.

418-3 Training and Development in Administrative Services. Theories of learning and instructional development to the education/training of employees in office systems/administrative services. Analysis of office and administrative services occupations, instructional design, instructional and presentation strategies, training evaluation, use of instructional technology, and the implementation, evaluation and management of training in an organizational environment. Prerequisite: 412 or equivalent.

428-3 Home Economics for Elementary Teachers. Identification and development of home economics related experiences appropriate for various levels of elementary curriculum. Interpretation of current vocational education legislation and trends affecting elementary programs.

431-3 Demonstration and Laboratory Techniques in Home Economics Education. Practice in planning and carrying out instructional demonstrations in home economics for youth and adults. Use of audiovisual aids and hand-outs. Procedures for laboratory and guided practice to develop psychomotor skills. Attention given to TV presentations. \$5 to \$8 lab fee required. Prerequisite: 320.

439-3 Historic Clothing: Western Cultures. Development of clothing in western civilization to the present time. Consideration of social, economic, aesthetic factors and technical innovations influencing clothing. Prerequisite: 347.

440-3 Experimental Custom Apparel Design. Development of apparel to meet aesthetic, structural and functional needs; problem solving for exceptional proportions, rehabilitation, activity, performing arts, new technology, materials and environment. Prerequisite: 340, 342, 344 and 348.

442-3 Clothing Economics. Factors of production, distribution and consumption influencing clothing industry; management of these factors in clothing related businesses; place of clothing industry in national and international markets. Prerequisite: Economics 113 or 241.

444-3 Mass-Market Apparel Design. Design of a line to specifications; drafting; toiles, mass-production costs; work flow; use of industrial equipment. Field trips. Prerequisite: 340, 342, 344, 348.

445-3 Textile Product Testing. Exposure to and experience with methods used by retailers and manufacturers of textile items to measure performance and maintain quality. Standards, sampling and replication requirements and interpretation of results. Prerequisite: 345a and 345b.

446-3 Professional Practices in Fashion Design. Business principles of apparel design, including systems, forms and logistics of money and materials. Functions and responsibilities of the fashion designer. Career opportunities in the fashion industry. Prerequisite: 340, 342, 344, and 348.

448-3 Custom Tailoring. Individualizing, fitting and contouring of male or female garment for customers from commercial pattern or from original pattern. Organization of work and time. Prerequisite: 348.

449-3 Historic Clothing: Non-Western Cultures. Traditional dress in non-western cultures. Aesthetics, symbolism, and uses of costume in the culture; effect of clothing on economy. Cultures studied may vary with each offering. Prerequisite: 347.

460-3 to 15 (3,3,3,3,3) Occupational Analysis and Curriculum Development. System approach to curriculum development. Includes analyzing occupations, specifying objectives and developing curriculum in (a) administrative services training, (b) business education, (c) education, training and development, (d) home economics, and (e) vocational teacher development.

462-3 to 15 (3,3,3,3,3) Instructional Methods and Materials. Instructional methods in occupational training in (a) administrative services training, (b) business education, (c) education, training and development, (d) home economics, and (e) vocational teacher development. Prerequisite: 460.

463-3 Assessment of Learner Performance. Development and use of evaluation instruments to assess student performance in training classrooms and laboratories. Criterion- and norm-referenced objectives, applications of taxonomies in development of written tests, performance tests and attitude measures. Prerequisite: 460.

464-3 Special Needs Learners and Work Education. Theoretical and applied concepts in teaching special needs learners. Effective aspects of learning are emphasized. Curricula and teaching materials are examined and prepared. Field trips.

466-3 Foundations of Work Education. Examination of the historical, social, economic and psychological foundations of workforce education. Nature and role of education and training in preparing people for the world of work.

468-3 Education/Labor Force Linkages. Attention given to the following areas: overcoming barriers to the linkage process; developing effective lines of communication; resource sharing; conducting joint problem solving with other agencies and individuals within the community; and jointly developing and providing programs and services.

469-3 Training Systems Management. Insight and understanding of administration and management of organizational training. Principles and techniques of managing training organizations. Process of planning, organizing, programming, staffing, budgeting and evaluating a training organization.

472-3 Organizing Cooperative Education. Introduction to cooperative education including history, rational, legislation, goals and objectives. Programming, public relations and evaluation of cooperative education. In-

roduction of student selection and management of cooperative education programs. Fulfills three semester hours of six required for State of Illinois certification.

473-3 Coordinating Cooperative Education. Competencies required for coordination of cooperative education programs. Selection and maintenance of training stations, student placement, related instruction and program management. Fulfills the remaining three semester hours required for State of Illinois Certification. Prerequisite: 472.

474-3 Individualizing Training. Study and development of theory, characteristics, appropriateness and evaluation techniques of individualized training packages. Review of current state of individualized instruction in work education. Prerequisite: 460.

484-3 Adult Training in Organizations, Business and Industry. A study of adult and workforce education as offered in a variety of educational settings. Major topics include organization, funding, instruction, student characteristics and evaluation. Prerequisite: consent of instructor.

490-1 to 4 Readings. Supervised reading for qualified students. Includes the following areas: (a) Administrative services training, (b) Business education, (c) Education, training and development, (d) Home economics, (e) Vocational teacher development, or (f) Clothing and textiles. Prerequisite: consent of instructor.

491-1 to 5 Advanced Occupational Skills. Modern occupational practice in selected fields. For experienced professionals seeking advanced techniques in (a) Administrative services training, (b) Business education, (c) Education, training and development, (d) Home economics, (e) Vocational teacher development, or (f) Clothing and textiles. Prerequisite: consent of instructor.

494-1 to 4 Workshop. Current work education issues for teachers, supervisors and administrators. Emphasis of each workshop will be identified in workshop announcements. (a) Administrative services training, (b) Business education, (c) Education, training and development, (d) Home economics, (e) Vocational teacher development, or (f) Clothing and textiles.

495-2 to 12 Instructional Internship. Internship in approved education and/or training centers. Intern instructor will increasingly assume responsibilities for preparing, presenting and guiding occupational learning in (a) Administrative services training, (b) Business education, (c) Education, training and development, (d) Home economics, (e) Vocational teacher development, or (f) Clothing and textiles. Not for graduate credit. Prerequisite: 462 and 20 semester hours in specialization.

496-2 to 12 Professional Internship. Research, curriculum development or program management at approved education or training sites. The intern will follow the program of the supervising professional in regular and related activities. For students in (a) Administrative services training, (b) Business education, (c) Education, training and development, (d) Home economics, (e) Vocational teacher development, or (f) Clothing and textiles. Not for graduate credit. Prerequisite: twenty semester hours in specialization.

497-1 to 6 Practicum. Applications of work education skills and knowledge. Cooperative arrangements with corporations and professional agencies to study under specialist. For (a) Administrative services training, (b) Business education, (c) Education, training and development, (d) Home economics, (e) Vocational teacher development, or (f) Clothing and textiles. Prerequisite: twenty hours in specialization.

498-1 to 5 Special Problems. Investigation of work education problems in (a) Administrative services training, (b) Business education, (c) Education, training and development, (d) Home economics, (e) Vocational teacher development or (f) Clothing textiles. Prerequisite: consent of instructor.

Zoology (ZOOL)

Students enrolled in zoology courses may incur field or lab expenses of \$5 to \$25.

115-3 General Biology. Same as Plant Biology 115. (University Core Curriculum) Introduction to fundamental biological concepts for non-life science majors interested in learning about interrelationships of human, plant and animal communities. Integrated lecture and laboratory cover topics that include structure and function of living systems, reproduction and inheritance, evolution, biological diversity and environmental biology. Laboratory applies scientific methods to the study of living systems.

118-4 Principles of Animal Biology. An introduction to the basic concepts of animal biology including chemical organization of protoplasm; organization of matter into cells, tissues, organs and organ systems; classification and distribution of animals; ecology; heredity and organic evolution; economic biology and conservation; and animal behavior. A cost of \$5 may be incurred by the student. Three lectures and one two-hour laboratory per week. Prerequisite: high school biology.

202-2 Human Genetics and Human Health. Same as Microbiology 202. (University Core Curriculum) Acquaints the student with the role played by genetic information in human development and disease. Discussion topics will include genetics and human diversity, the interaction of genetic information and the environment, the concepts of genetic disease, the mechanisms and ethics of gene therapy and the possibilities of manipulating the genetic material.

212-2 Birding. Bird watching for pleasure. Consideration of identification, songs and ecology of birds, information on bird organization, equipment, and techniques. Credit may not be used toward a major in zoology. Two lectures per week. Offered Fall term.

214-3 Human Heredity. Principles of heredity as related to humans, with emphasis on the affects of environment on the biological inheritance. Credit may not be used toward a major in zoology.

220-6 (3,3) Diversity of Animal Life. Diversity and its taxonomic treatment of animals, emphasizing structure, function, life cycles, behavior, and phylogeny. (a) Invertebrates, (b) Vertebrates. Two lectures and one two-

hour laboratory per week. Need not be taken in a,b sequence. Fall, Spring. Prerequisite: 118 or Biology 200, or strong background in high school biology recommended.

300-4 Vertebrate Embryology. Main features of embryonic and fetal development from fish to humans. Two lectures and two 2-hour laboratories per week. Offered Fall and Spring terms. Prerequisite: 220b.

305-2 Genetics Laboratory. Experimental methods in applying basic principles of genetics. Monogenic and digenic inheritance, sex-linkage, gene interaction, linkage and chromosome mapping, mutation, artificial and natural selection, gene frequencies, and genetic drift. Two 2-hour laboratories per week. Offered Spring term. Prerequisite: Biology 305, or concurrent enrollment.

309-3 Elementary Cell Biology. Introduction to structure, function, and natural history of major cell types. Two lectures and one 2-hour laboratory per week. Offered Spring term. Prerequisite: consent of instructor.

3121-3 Conservation of Natural Resources. (University Core Curriculum) This course teaches an ecological perspective on current issues in natural resource conservation and management. Economic, political and social pressures that influence consumptive use of natural resources are considered, along with ecological consequences of resource exploitation. A conservation perspective is developed in which humans are viewed as participants in, rather than masters of the natural environment.

316-3 Insect Pests and Their Control. Classical and economic entomology including morphology, physiology, and taxonomy. Life history, damage, and control of principal injurious insects will be discussed. Two lectures and one 2-hour laboratory per week. Credit may not be used toward a major in zoology. Offered Fall term. Prerequisite: 118 or equivalent.

351-4 Ecological Methods. Basic ecological field techniques for analysis of community structure and functional relationships. Two 4-hour laboratories per week. Offered Spring term. Prerequisite: 220a,b and Biology 307.

390-1 to 12 Internship. Supervised off-campus training in a formalized internship program with a zoological institution or agency. May not be used for credit in zoology. Must submit letter from sponsoring agency and prospectus with duties and duration of internship to director of undergraduate studies. No more than three hours per semester may be taken if student is on-campus, or six hours if off-campus. Mandatory Pass/Fail. Prerequisite: major in zoology and prior approval by faculty supervisor.

393-1 to 3 Individual Research. Research on zoological problems. May not be used for minor in zoology. Some cost may be borne by student. Student must identify a zoology faculty supervisor to approve proposed research and evaluate performance. Approved proposal detailing research project and number of credit hours requested must be filed with director of undergraduate studies before the semester in which student is enrolled. Mandatory Pass/Fail. Prerequisite: minimum of 2.50 gpa ($A = 4.00$), senior standing, and prior approval by faculty supervisor.

400-3 Cell Biology of Development. Cellular molecular mechanisms of embryogenesis and differentiation. Examination of the cell as a component of interacting tissues constituting the developing organism. Prerequisite: 300 or Biology 309 or advanced standing in Life Sciences or consent of instructor.

401-3 Developmental Neurobiology. This course presents a survey of the basic principles that underlie the development of the nervous system, including an examination of the important questions and issues currently being studied by neuroembryologists. Prerequisite: advanced standing in biology/science or consent of instructor.

402-3 Natural History of Invertebrates. Introduction to ecology, intraspecies communication and interspecies relationships of invertebrate animals. Recommended for teacher preparation programs. Two lectures and one 2-hour laboratory per week. Offered Fall term. Prerequisite: 220a.

403-3 Natural History of Vertebrates. Life histories, adaptations, and identification of fish, amphibians, reptiles, birds, and mammals, emphasizing local species. Recommended for teacher preparation programs. One lecture and two 2-hour laboratories per week. Offered Spring semester. Prerequisite: 220b or consent of instructor.

404-3 Evolutionary Biology. Concepts and principles of modern evolutionary theory at a level appropriate for upper-division majors and graduate students in any biological science. Prerequisite: 220a,b or equivalent and Biology 305 or consent of instructor.

405-3 Systematic Zoology. Theory and procedure of classification; population taxonomy; variation and its analysis; rule of zoological nomenclature; taxonomic publication. Three one-hour lecture-discussion meetings per week. Prerequisite: 220a, b or consent of instructor.

406-3 Protozoology. Taxonomy, cytology, reproduction, and physiology of unicellular animals. Laboratory methods for culture and study. One lecture and two 2-hour laboratories per week. Offered Fall term. Prerequisite: 220a.

407-4 Parasitology. Principles, collection, identification, morphology, life histories, and control measures. Two lectures and two 2-hour laboratories per week. Offered Spring term. Prerequisite: 220a.

408-3 Herpetology. Taxonomic groups, identification, morphology, and natural history of amphibians and reptiles. One lecture and two 2-hour laboratories per week. Offered Fall term. Prerequisite: 220b.

409-4 Vertebrate Histology. Microscopic structure of organs and tissues with emphasis on mammalian material. Two lectures and two 2-hour laboratories per week. Offered Spring term. Prerequisite: 10 to 12 semester hours of biological science.

413-4 The Invertebrates. Structure, phylogeny, distinguishing features and habitats of the invertebrates. Two lectures and two 2-hour laboratories per week. Offered Spring term. Prerequisite: 220a.

414-4 Freshwater Invertebrates. Taxonomic groups, identification, distribution, and habitats of the North American freshwater invertebrate fauna. Two lectures, two 2-hour laboratories per week. Offered Fall term. Prerequisite: 220a.

415-3 Limnology. Lakes and inland waters; the organisms living in them, and the factors affecting these organisms. Two lectures per week and one 4-hour laboratory alternate weeks. Offered Fall term. Prerequisite: 220a.

418-4 Comparative Vertebrate Anatomy. The comparative structure and evolution of vertebrate organ systems. Two lectures and two 2-hour laboratories per week. Offered spring term. Prerequisite: 220b.

421-4 Histological Techniques. Methods of preparing animal tissue for microscopic study and learn theories of staining and histochemistry. One lecture and two 3-hour laboratories per week. Offered Fall term. Prerequisite: 10 semester hours of biological science.

426-3 Comparative Endocrinology. Comparison of mechanisms in influencing hormone release, hormone biosynthesis, and the effects of hormones on target tissues. Include ablation and histology of glands and chemical and bio-assays with vertebrates and invertebrates. Two lectures and one 2-hour laboratory per week. Offered Spring term.

458-3 Issues in Aquatic Ecology. With its primary focus on freshwater ecosystems, this course will cover important issues in aquatic ecology, including: surface water and groundwater quality, global warming, use of fish hatcheries, exotic species, genetically manipulated organisms, stream habitat degradation, dams, diversions, the Great Lakes and local issues. Prerequisite: Biology 307 or consent of instructor.

460-2 Upland Game Birds. Biological overview and identification of upland and shoreline game birds plus raptors and selectively-managed species. One lecture and one 2-hour laboratory per week; there will be up to two Saturday field trips. Offered Spring term. Prerequisite: 220b or consent of instructor.

461-3 Mammalogy. Taxonomic characteristics, identification, and natural history of mammals. Two one-hour lectures and one 2-hour laboratory per week. Offered Spring semester. Prerequisite: 220b.

462-3 Waterfowl. Identification, life history, ecology, and management. Two lectures and one 2-hour laboratory per week; there will be three or four Saturday field trips. Prerequisite: 220b or consent of instructor.

463-3 Game Mammals. Natural history and management. Two lectures and one 2-hour laboratory per week. Prerequisite: 220b or consent of instructor.

464-3 Wildlife Administration and Policy. Responsibilities of private, state, and federal natural resources management agencies. Legal and political processes in areas of wildlife and natural resources. Three lectures per week. Offered Spring term. Prerequisite: consent of instructor.

465-3 Ichthyology. Taxonomic groups, identification, and natural history of fishes. Two lectures and one 2-hour laboratory per week. Offered Spring term. Prerequisite: 220b.

466-3 Fish Management. Sampling, age and growth, dynamics, habitat improvement, manipulation of fish populations, and management of freshwater and marine fish stock. Two lectures per week and one 4-hour laboratory alternate weeks. Offered Fall term. Prerequisite: 10 hours of biological science or consent of instructor.

467-3 Ornithology. Classification and recognition of birds and the study of their songs, nests, migratory habits, and other behavior. One lecture and one 4-hour laboratory per week. Offered Spring term. Prerequisite: 220b.

468-3 Wildlife Biology Principles. Basic concepts of wildlife ecology and management. Includes lectures on ecological physiology, population dynamics and wildlife management strategies. Prerequisite: Biology 307 and seven other semester hours of biological science.

469-3 Wildlife Techniques. Field-oriented course with instruction in techniques for management of wild species and their habitat. One 1 1/2-hour lecture and one 3-hour laboratory per week, two of which may be field trips on Saturdays. Prerequisite: 10 semester hours in biology and/or zoology or consent of instructor.

470-3 Interdisciplinary Approaches to Environmental Issues. (Same as Geography 470 and Agribusiness Economics 470) Application of concepts from the biological, physical, and social sciences, economics, humanities, and law, are used to understand the interdisciplinary complexities of environmental issues. Students will develop and demonstrate problem-solving skills as part of a team analyzing a regional environmental issues. Team-taught seminar style discussions. Prerequisite: Plant Biology 301i and admission to Environmental Studies minor program.

471-4 Entomology. Structure, classification, and life histories of insects. Two lectures and two 2-hour laboratories per week. Offered Fall term. Prerequisite: 220a.

473-4 Aquatic Entomology. Structure, classification, and biology of aquatic insects. Two lectures and two 2-hour laboratories per week. Offered Fall term. Prerequisite: 220a.

475-3 Advanced Cell Biology. (Same as Plant Biology 475.) Cell structure at molecular and cytological levels. Includes discussions of research methods, and plasma membrane, cell exterior and recognition, the endomembrane system and related organelles, self-replicating organelles, the cytoskeleton, nuclear structure and function in cell replication, cell differentiation and response, and eukaryotic cell evolution. Prerequisite: Biology 306 or equivalent.

476-2 Advanced Cell Biology Laboratory. (Same as Plant Biology 476.) Laboratory course to accompany 475. Light and electron microscopy, cell culturing, biochemical methods, and experimental protocols are used to study the structure of cell membranes, intracellular organelles, including the Golgi apparatus, ER, mitochondria, plastids, and lysosomes, the cytoskeleton and nucleus. Prerequisite: 475 or concurrent enrollment.

477-3 Fish Culture. Production of game, food and bait fishes. Design of facilities, chemical and biological variables, spawning techniques, diseases and nutrition. Two lectures per week and one four-hour laboratory alternate weeks. Prerequisite: ten hours of biological science or consent of instructor.

478-3 Animal Behavior. Biological basis of the behavior of animals. Two lectures and one 2-hour laboratory per week. Offered Fall semester. Prerequisite: one year of biological science or permission of instructor.

480-3 to 4 Research Methods in Animal Behavior. Skills relevant to conducting research in animal behavior. Guided self-instructional format, with two 2.5-hour periods scheduled weekly, primarily as question/answer

and evaluation sessions. Offered spring semester. Prerequisite: 478 and a course in statistics is recommended, or consent of instructor.

482-1 Zoology Seminar for Seniors. Each student reports on a selected topic, using original scientific literature, and the report is discussed by the class. One meeting per week. Offered Fall, Spring, Summer terms. Not for graduate credit. Prerequisite: senior standing or 24 hours of life science completed. Mandatory Pass/Fail.

485-2 to 4 Special Topics in Zoology. Examination of topics of special interest not available in other departmental courses. Offered in response to student need and faculty availability. Prerequisite: consent of instructor.

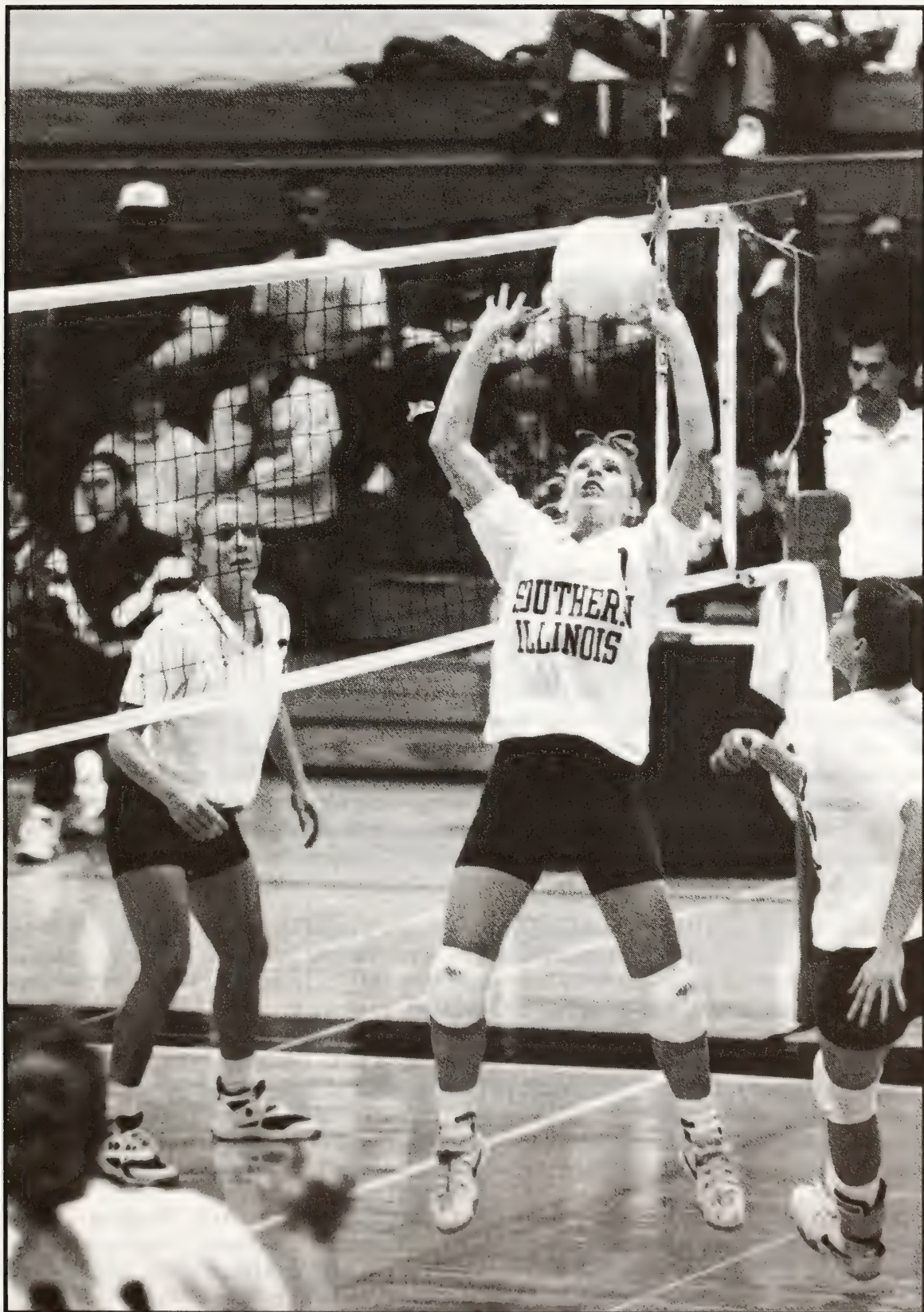
493-1 to 6 Honors Research. Individual research for honors students in zoology. For undergraduate credit only. Prerequisite: approval of departmental chair and a faculty supervisor.

496-2 to 4 Zoology Field Studies. A trip of four to eight weeks to acquaint students with animals in various environments and with methods of field study, collection, and preservation. Offered Fall, Spring, Summer terms. Prerequisite: consent of department.

497-3 Helminthology. Identification, structure, physiology, and life history of parasitic helminths. Three lectures per week. Prerequisite: 407.

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6 / Student Services



Campus Life

STUDENT DEVELOPMENT

The central focus of Student Development is to promote individual student growth and personal achievement through a wide range of programs and services intentionally designed to complement and enhance the student's educational experience. A primary goal is to provide opportunities for student involvement, student development and experiential learning which contribute to student success and satisfaction. Programmatic emphases include:

NEW STUDENT AND FAMILY/PARENT PROGRAMS

Student Orientation Programs

Student Development provides a comprehensive orientation program designed to assist new students in making a smooth transition into the University community and to introduce both new students and their parents to the University's vast array of resources, programs and services. Orientation sessions are offered prior to the beginning of each semester and on new student advisement and registration days. Specially trained upperclassmen, known as Student Life Advisers, serve as orientation peer advisers to help the new student learn about the campus and its services. The Student Orientation Committee is available year round to assist students. For additional information, contact Student Orientation Programs in the Student Development Complex on the third floor of the Student Center, 453-5714.

First Year Experience: A Magic Step Ahead

It's MAGIC. Project MAGIC, Maximize Academic Growth In College, is one of three unique first year experience programs designed as a general advisement program for new students. The purpose of the program is to help new students derive the greatest possible benefit from the people, programs and facilities at the University. This is accomplished by providing interested new students with the opportunity to develop a friendly and helpful relationship with a member of the University faculty or staff, a mentor, who can assist the new student in developing career and academic goals, in learning how to maximize the educational opportunities available at the University and in becoming acclimated to college life. To enroll, contact First Year Experience Programs in the Student Development Complex on the third floor of the Student Center, telephone 453-5714.

Project STEP. Project STEP, Success Through Experienced Peers, one of three in a series of first year experience programs, is a peer mentoring program for new students. The purpose of the program is to help prepare new students for success at the University by providing them with the opportunity to develop a friendly and informal mentoring relationship with an experienced Southern Illinois University at Carbondale student. Trained volunteer peer mentors help new students become acclimated to college life, develop educational and career goals and learn about involvement and leadership opportunities at the University. To participate, contact First Year Experience Programs in the Student Development Complex on the third floor of the Student Center, telephone 453-5714.

Project AHEAD. In cooperation with the College of Liberal Arts, Student Development provides an academic course, LAC 101, for first semester students at the University. Commonly referred to as Project AHEAD, A Humanistic Educational Approach to Development, the course is designed to help prepare students for suc-

cess in college and is one of the three programs specifically designed for new students. The course uses an experiential mode of learning activities and group discussions pertaining to the first year experience. Topics for discussion focus on factors and issues associated with successful adjustment in college and academic achievement. Students learn valuable tips on study skills, communication skills, reading skills, time management techniques and testing skills. Contact First Year Experience Programs in the Student Development Complex on the third floor of the Student Center, telephone 453-5714, for more information.

SIUC Parents Association

Open to parents and families of students, as well as friends of the University, the SIUC Parents Association provides opportunities for parents and family members to become better informed and actively involved with their students' educational and University experiences. The nominal annual family membership fee entitles Association members to periodic newsletters, special event programs and a number of University and community discounts. The Parents Association Committee is available year round to assist students, their parents and families. Membership applications are available from the SIUC Parents Association in the Student Development Complex on the third floor of the Student Center, telephone 453-5714.

CAMPUS SAFETY PROGRAM

All full-time students support, through their student activity fee, several student safety programs and services, including a Women's Night Safety Transit, and an Evening Van and Transit Car Service. For more information about these transit services, telephone 536-2338.

Women's Night Safety Transit

Operated Sunday through Friday during the evening hours, Women's Night Safety Transit is available to female students who are concerned about their safety. Rides are provided to students living off campus to bring them to campus for classes, library, and other activities and return home. For rides, telephone 453-2212.

The Evening Van and Transit Car Service

The Evening Van and Transit Car Service is designed to provide transportation of currently enrolled, disabled students to and from campus for academic purposes on an on-call basis. A similar Day Van Service is available to transport students with disabilities to and from campus for academic purposes on a scheduled basis. For rides, telephone 453-2004.

MULTICULTURAL PROGRAMS AND SERVICES

A central goal of Multicultural Programs and Services is to facilitate the design, coordination and implementation of programs and services that foster educational achievement and personal growth and development of the minority student population. Educational, cultural, and social programs and activities, including historical commemorations and celebrations, are sponsored to promote cultural pluralism within the University community. For additional information, contact Multicultural Programs and Services in the Student Development Complex on the third floor of the Student Center, telephone 453-5714.

Saluki Peers

The Saluki Peers Program is a coordinated effort to monitor the progress of freshman minority students. The objectives of the program are to provide an orientation to the

University learning environment within the context of a multicultural/pluralistic perspective, to assist students with problem solving, to assist students with their studies as necessary, and to encourage students to utilize tutorial services. Contact Multicultural Programs and Services in the Student Development Complex on the third floor of the Student Center, telephone 453-5714.

Emerging Leaders Program

The Emerging Leaders Program is designed to assist freshman minority students in developing their full potential as both scholars and citizens. Students who participate in the program not only gain insight into what it is like to be a campus leader, at SIUC, but also gain confidence in making or seeking leadership opportunities. Through their involvement in leadership activities, students are able to apply problem solving, interpersonal and persuasive skills to their lives after college. Program participants receive academic credit through a course offered in cooperation with Black American Studies. For additional information, contact Multicultural Programs and Services, located in the Student Development Complex on the third floor of the Student Center, telephone 453-5714.

NON-TRADITIONAL STUDENT SERVICES

Designed to assist non-traditional students with their unique educational, personal and professional needs. Non-Traditional Student Services, NTSS, provides services for those students who are 24 years of age or older, are married, have dependents, are enrolled part time, or have been away from formal education for a period of time. Increasing the awareness of and response to non-traditional students and their spouses and families within the University environment are of primary concern. Services offered include assistance with the non-traditional student's transition into the University learning environment, general information and referral services, an emergency locator system for students who are parents, newsletter and handbook publications especially designed for the non-traditional student. For assistance or additional information, contact Non-Traditional Student Services in the Student Development Annex, located in Woody Hall, B Wing, telephone 536-2338.

Re-Entry Women's Program

Assisting re-entry women students into and through the University is the central goal of the Re-Entry Women's Program. Services include child care referrals and information on University procedures, as well as networking opportunities to help re-entry women find support and encouragement from one another. For assistance, contact Non-Traditional Student Services, located in Woody Hall, B Wing, telephone 536-2338.

RAINBOW'S END CHILD DEVELOPMENT CENTER

Rainbow's End is a comprehensive child development center designed to serve children, ages 6 weeks to 15 years, of University students, faculty and staff members. The center, which is licensed by the State of Illinois Department of Children and Family Services, is staffed by qualified professionals, is a participant in the State of Illinois Child Care Food Program, and serves as a replication site in an international research project through the Warner Institute's Center for Childhood Creativity at California State University at Northridge. Special features of Rainbow's End include a range of full and part time day care options, the assessment of tuition and fees based upon the number of hours for which the child is enrolled, and reduced tuition fees for student parents. Programs offered include infant/toddler, preschool, school age, summer school age, and before and after school care, in addition to an evening care program, an intergenerational program sponsored in cooperation with the Carbondale Senior

Citizens, and an anti-bias curriculum. Rainbow's End is open from 7:30 A.M. to 5:30 P.M. each day University classes are in session. Break hours are 8:00 A.M. to 5:00 P.M. Evening care services are offered Monday thru Thursday from 5:30 P.M. to 9:45 P.M. For additional information, telephone Rainbow's End at 453-6358.

REGISTERED STUDENT ORGANIZATIONS PROGRAMS

Over 400 registered student organizations offer opportunities for student involvement, student leadership development and experiential learning. A core of volunteer faculty/staff advisers, along with the professional staff of Student Development, provide direction and consultation to the student organizations in the areas of fiscal and organizational management and University policies and procedures. The program also provides a variety of services including: membership referrals, student organization directories, leadership development workshops, equipment checkout services, copy duplicating service, mailbox service and a programming resource library. Among the registered organizations are student governmental groups, coordinating councils, public interest groups, fraternities and sororities, publication and media groups, scholastic and professional honoraries, departmental clubs, special interest groups, religious organizations and sports and recreation clubs. Interested students should contact RSO Programs in the Student Development Complex on the third floor of the Student Center, telephone 453-5714.

Fraternal Education

The Fraternal Education Program promotes the growth and development of SIUC students who elect to affiliate with Greek letter organizations. Composed of thirteen fraternities and eight sororities, the University's social fraternal system represents one of several alternative lifestyles for college students to pursue. Primary program emphases of the SIUC Fraternal Education Program include: promoting the intellectual, vocational, social, moral and recreational development of students; providing training in leadership skills and other personal and social skills; promoting student involvement in extracurricular activities and community service; promoting Greek life as a productive and viable lifestyle on campus; and promoting an appreciation for different lifestyles and cultural heritages. The Inter-Greek Council, IGC, which consists of elected representatives from each of the nationally recognized chapters, serves as the activity coordinating council for the system. Sub-Councils include the Interfraternity Council, Panhellenic Council, and Pan-Hellenic Council. Major programs and activities sponsored by the Greek System include New Student Orientation Welcomefest, Greek Week, Operation Happy Holiday, and the Annual All-Campus Theta Xi Variety Show, in addition to numerous philanthropic and service projects. Rush, or membership recruitment, is sponsored as well as at designated times throughout the year. For additional information, contact Fraternal Education in the Student Development Complex on the third floor of the Student Center, telephone 453-5714 or stop by the IGC office on the third floor of the Student Center, telephone 453-2633.

The Leadership Center

Student Development sponsors a student leadership development series designed to provide students with activities and experiences that enhance their skills and student involvement on the campus. Leadership workshops and, special topic seminars, ranging from student organizational management to group development, are offered throughout the years, as well as by special request. In addition, a collection of handbooks and manuals on such areas as parliamentary procedures, fund raising and budgeting has been developed to assist RSO leaders with their organizational management skills. To enroll in a seminar or to schedule a workshop, contact RSO Pro-

grams in the Student Development Complex, located on the third floor of the Student Center, telephone 453-5714.

The Academy

Opportunities to enhance student leadership and citizenship potential are offered through The academy. This program provides a *catalog* of involvement opportunities that complement the student's in-classroom experience. Through specially designed modules, as well as documented University and community experiential learning, students may complete any one of three programmatic components: leadership development, student volunteer/community service-learning, citizenship development. Students who complete all three programmatic requirements are eligible to receive a Student Involvement Transcript. To enroll in The Academy, contact Student Development on the third floor of the Student Center, telephone 453-5714.

Student Media and Publications

Special opportunities are available for students who have an interest in the areas of media and publications. These include serving as an editor, photographer, artist, writer for the *Monolith* new student record book; *Insight* a newsletter published especially for members of the SIUC Parents Association; *Southern Portrait* a monthly newsletter devoted to special features and items of particular interest to student leaders and members of RSOs; *Rainbow Connection* a letter for parents of children enrolled at Rainbow's End child development center; and a variety of other newsletters designed especially for specific target populations ranging from Student Life Advisers to non-traditional students to minority students. Student Development also serves as the office of record for all RSO media and official publications and provides assistance to RSOs in meeting University guidelines. For additional information or to volunteer for a student publication, contact RSO Programs in the Student Development Complex, located on the third floor of the Student Center, telephone 453-5714.

Credit for Involvement

In cooperation with various academic units, Student Development provides opportunities for students to receive academic credit for their participation in student activities and student organizations. Opportunities available include leadership development courses for fraternity and sorority members, community service-learning programs for student volunteers, leadership development seminars for Student Life Advisers and Emerging Leaders, leadership development courses for student government members, and undergraduate and graduate internships in such areas as student development, early childhood education, and student media and publications. For additional information, contact Student Development on the third floor of the Student Center, telephone 453-5714.

STUDENT JUDICIAL AFFAIRS

Student Development administers the *Student Conduct Code* and supervises the judicial program for social misconduct, through the Student Judicial Affairs Program. The purpose of the *Student Conduct Code* is to establish and maintain an orderly environment conducive for learning, free expression, free inquiry, intellectual honesty, respect for others, and participation in constructive change; to promote the development of ethically sensitive and responsible persons; and to protect relevant legal rights of students. The judicial program is designed to contribute to the teaching of appropriate individual and group behavior as well as to protecting the campus community from harm and disruption. Special emphasis is placed on the training and contributions of students and faculty who serve on judicial review boards. For additional information regarding the rights and responsibilities of students under the

Student Conduct Code or the judicial review process, contact Student Judicial Affairs in the Student Development Annex, located in Woody Hall, B Wing, telephone 536-2338.

STUDENT VOLUNTEER AND COMMUNITY SERVICE-LEARNING PROGRAMS

SIUC recognizes and agrees that the nation's greatest social problems can only be addressed if individuals, groups and institutions become actively engaged in providing service to the community. Through the Saluki Volunteer Corps and other Student Development programs, SIUC is making every effort to prepare students for a life of involvement and committed citizenship. The Saluki Volunteer Corps, SVC, promotes the ideas of citizenship and concerns for others through student involvement in community service. Students are encouraged, throughout their college career, to participate in community service at least 30 hours each academic year. The Saluki Volunteer Corps not only acts as a clearinghouse for service requests from campus and community agencies, but also documents community service hours, which may be recorded on the student's academic transcript, and prepares a Student Involvement Transcript listing all the community service and leadership education opportunities/activities in which the student has participated. For additional information, contact the Saluki Volunteer Corps in the Student Development Complex, located on the third floor of the Student Center, telephone 453-5714.

TRANSITIONAL PROGRAMS

Early Warning System

While adjusting to college life can be one of the most stressful transitions students may experience, special assistance is offered through the Early Warning System. Trained faculty and staff volunteers are available to assist students by lending support and making appropriate referrals to University professional staff members or campus agencies. Additional information may be obtained by contacting the Early Warning System through Transitional Programs in the Student Development Annex, Woody Hall, B Wing, telephone 536-2338.

Undergraduate Student Withdrawals

Exit interviews are conducted for all undergraduate students contemplating withdrawal from the University. The purpose of the exit interview is to assess the student's need, suggest alternatives to withdrawal, explain the implications of withdrawal and guide the student through the process. Because withdrawal from the University may have an adverse effect on the student's financial obligations including eligibility to continue to receive financial assistance, and upon the student's permanent academic record including eligibility to be readmitted to the University, each withdrawal request is reviewed independently from each request for a credit/refund of tuition and fees. Contact Transitional Programs in the Student Development Annex, located in Woody Hall, B Wing, telephone 536-2338, for complete details on how to withdraw from the University.

Motor Vehicle Parking Exemptions

Regulations concerning the use of motor vehicles on the SIUC campus require that a student have achieved junior status, be 21 years of age or older, married, a veteran, or hold graduate student status. Exceptions are made only on a limited basis and only for students whose need for a motor vehicle is justified and can be documented. Contact Transitional Programs in the Student Development Annex, located in Woody Hall, B Wing, telephone 536-2338, for details on how to apply for an exemption.

Student Absence Reports

Student Development, through Transitional Programs, provides a system to verify and document the reasons for student absences from class. Verified information is forwarded to the student's Academic Dean for transmittal to the individual faculty member for approval or disapproval. This service is provided largely for students who are ill or hospitalized, upon verification by Student Health Programs. However, the service also is provided in cases of family illness, death, or other personal tragedy. For additional information, contact Transitional Programs in the Student Development Annex, located in Woody Hall, B Wing, telephone 536-2338.

Student Death Notices

Student Development, through Transitional Programs, is the office of record regarding all student deaths, including those of former students. When a student death is verified, a notice is sent to appropriate University offices so that institutional records may be adjusted to remove the name of the deceased student. Professional staff members are also available to provide appropriate assistance to the surviving parents or family members. To report a student death, contact Transitional Programs in the Student Development Annex, located in Woody Hall, B Wing, telephone 536-2338.

Power of Attorney

If a student is unable to be on campus to claim a check, arrangements may be made for Student Development, through Transitional Programs, to act for the student to negotiate the check to pay any outstanding bills owed to SIUC. This service is provided to student graduates who cannot remain on campus until the check is available or to continuing students who may be away from the campus for a practicum, internships, or student teaching assignment. The student must sign a power of attorney form, have the signature notarized, and authorize negotiation of the check. Exclusions to this service include negotiating grant and student loan checks. For details, contact Transitional Programs in the Student Development Annex, located in Woody Hall, B Wing, telephone 536-2338.

Campus Services

Student Center

The Student Center is the community center of the University for all students, faculty, staff, alumni, and guests. It is not just a building—it is an organization and a program which together represent a well-considered plan for the community life of the University.

The Student Center offers students many work and cocurricular opportunities. Approximately 450 students annually have job opportunities in the Student Center and the center receives sizable student work aid to supplement work opportunities. There are also academic credit and work-related opportunities in conjunction with Commercial Graphics-Design, and the Departments of Educational Administration and Higher Education, Food and Nutrition, and Recreation. In addition, through Student Center and Student Programming Council programs, nonmajors may become actively involved in theater, dance, and other performing arts activities.

As a community center it performs four important missions. It supplies support services which complement the academic mission of the university through the bookstore, food service, information services, and meeting facilities. It is part of the educational program of the University and serves as a laboratory of citizenship and leadership through participation in its various boards and committees that provide a

campus-wide social, cultural, and recreational program. It is an extension of the classroom which allows practicum students, graduate assistants and interns the opportunity to develop on-the-job expertise in their fields of learning. It serves as a unifying force in the University, cultivating interactions on a common ground between students, faculty, staff, alumni, and friends. It is a focal point to which alumni and students can relate when returning to campus.

The Student Center covers almost eight acres of floor space and is open approximately 16 hours a day, seven days a week. The University Bookstore sells new and used textbooks and school and personal supplies. An extensive food service includes fast food offerings such as McDonald's, Pizza Hut Express and Yogurt and Cream as well as traditional services, Marketplace Cafeteria, Old Main Restaurant, Bakery, Pecos Pete's and catering. Other facilities and services include a campus-wide ID system, automated post office, automated banking, event ticket sales, check cashing, Student Health Assessment Center, bowling lanes, billiard room, craft shop, art exhibit and display case areas, television and video lounges, and general lounges for study and relaxation.

Other available facilities include ballrooms, an auditorium, and several private meeting and dining rooms. Offices in the Student Center are the Student Development Office, the University Programming Office, and student organization and student government offices.

University Bookstore

The University Bookstore is an integral part of the Student Center and is located on the ground floor with the main entrance at the cross halls.

As part of the educational process, the University Bookstore provides textbooks and specialized supplies for all classes. It also has a general book department with references and current best sellers. In the supply sections, the University Bookstore carries a variety of office supplies, school supplies, art and engineering materials, computer supplies, imprinted apparel, gift items and greeting cards, and personal products.

The University Bookstore also provides the following services: book and thesis binding, laminating, rubber stamp ordering, class ring sales, technical pen cleaning, gift wrapping, document placquing, geological survey maps, postage stamps, Visa and Mastercard, cap and gown rental and sales, special order services for books and supplies, and textbook buy back service. Money spent at the University Bookstore returns to the operation of the Student Center.

Another important mission of the University Bookstore is to provide job opportunities, retailing and marketing experiences, internships, and a laboratory for research.

SIU Arena

The SIU Arena hosts a variety of athletic events, meetings, musical programs, stage performances and similar activities that demand an indoor participant area or a facility capable of accommodating large audiences. The SIU Arena is the site of the University's largest commencement ceremonies, graduating a total of 3,282 graduates in 1996. The staff of the SIU Arena is available to assist in achieving the goals of the educational programs of various University departments, in scheduling the facility for a number of indoor sporting events and practices for the Department of Intercollegiate Athletics, and in providing equipment and facilities for various University student groups. Finally, the SIU Arena presents a popular entertainment series that helps to fulfill the educational, cultural and entertainment needs of the University and its surrounding communities.

Shryock Auditorium

Located on the old campus of Southern Illinois University at Carbondale, Shryock Auditorium stands as the finest performing arts center in southern Illinois.

Constructed in 1917 and named after University president Henry William Shryock, the facility was renovated in 1970 at a cost of 1.5 million dollars. Upon re-opening in January, 1971, guests were pleased and surprised to find a new decor of opulent grand opera splendor, while the original motif of the building had been retained.

As the largest auditorium on campus, seating over 1,200, Shryock Auditorium is well equipped to handle almost any type of event, from the performing arts on a grand scale to large group meetings and conferences. Facilities include dressing rooms capable of accommodating up to 70 performers, modern stage rigging, lighting and sound systems, and air conditioning throughout the audience areas.

The Shryock Auditorium Celebrity Series annually presents the finest in touring musicals, plays, ballet, modern dance, opera, international entertainment, and big bands. In addition, the Auditorium is utilized by functional units of the University, by recognized student organizations, and by non-student on-campus groups when the event is of educational, cultural, or social significance.

The beautiful decor and appointments of Shryock Auditorium, with the nostalgic memories surrounding this old campus landmark, make it one of the places to which students and alumni return and proudly show campus visitors year after year.

University Museum

The University Museum serves the campus community and surrounding area through its active exhibit program and in its cooperative ventures with other academic units to improve the quality of instruction.

The exhibits housed in the University Museum facility, Faner Hall, C wing, are designed to give viewers an authentic glimpse of the area's past. Changing exhibits displayed in the University Museum include a series of graduate student thesis presentations, faculty art, and photography, as well as exhibits from the permanent collections and special national and international exhibits designed around a particular theme. In addition to these formal exhibits, many permanent collection objects are displayed at several other campus locations.

The University Museum also serves students in more specific ways, by providing on-the-job training, courses in museum studies, and opportunity for creating and installing practicum exhibits of art, history, and science. Through these avenues, students are able to draw on the extensive collections which include works of fine art, ethnographic artifacts from many areas of the world and 19th and 20th century historic objects.

The University Museum provides a community service through guided tours, lecture programs, a loan program, and exhibits in public places; and works with many area groups to provide meaningful learning experiences.

Campus Communications Media

SIUC BROADCASTING SERVICE

The SIUC Broadcasting Service operates public television stations WSIU-TV8 in Carbondale and WUSI-TV16 in Olney, and public radio stations WSIU-FM 91.9 in Carbondale and WUSI-FM 90.3 in Olney. Students are provided opportunities to get hands-on experience in a wide range of radio and television specialties. The Broadcasting Service encourages active student volunteer participation in all areas of its operations. Students are able to work with modern equipment in actual on-the-air situations. They can become involved in the creation of radio and television programming, and they can compete for paid student staff positions.

The stations of the SIUC Broadcasting Service are affiliated with a variety of national organizations such as National Public Radio and the Public Broadcasting Service. Students who work at the stations have learning experiences available to them which are extremely valuable upon entering the job market. Southern Illinois University at Carbondale is known nationally and admired for the practical experience it provides its students through participation in radio and television station activities.

NEWSPAPER

The *Daily Egyptian*, campus newspaper, is published when the University is in session Mondays through Fridays, spring and fall semesters and Wednesday through Fridays during the summer session, and serves as a morning daily newspaper for the University community. Paid tuition entitles students to a copy of the *Daily Egyptian* newspaper. The publication also serves as a laboratory newspaper for students in the School of Journalism, produced under professional supervision, using student editors and staff. About 100 students work at news gathering, editing and layout, production, advertising and distribution. The circulation is about 23,000. Students do not have to be enrolled in journalism to be employed in the newspaper departments of news, photography, camera, paste-up, typesetting, advertising, business, printing, and circulation. The newspaper is published and printed in a plant equipped with electronic facilities to produce a 40-page daily newspaper on a web offset press.

Intercollegiate Athletics

Excellence within the realm of competition and the classroom remains the standard for Southern Illinois University at Carbondale's athletics program which provides 18 sports for men and women. All intercollegiate sports compete at the NCAA Division I level.

Sports are offered in basketball, baseball, cross country, football, golf, softball, swimming and diving, tennis, track and field, and volleyball. All Saluki sports compete within the Missouri Valley Conference (MVC), except for swimming and diving, which is an independent, and football, which belongs to the Gateway Conference.

Many former Salukis have starred professionally and in the highest amateur circles. Steve Finley (Houston Astros) and Dave Stieb (Toronto Blue Jays) have made their marks in the major leagues. In football, SIUC had free agent signees this spring in Scott Gabbert (Cleveland Browns) and Yonel Jourdain (Buffalo Bills). In track and field, Connie Price, Darrin Plab and Cameron Wright rank among '96 Olympic hopefuls for the U.S.

SIUC athletes routinely gain high marks in the classroom. Forty-three percent of the University's 368 sports participants had at least B averages during fall '92. In particular, teams sparkled academically in women's tennis (3.39 gpa) and women's golf (3.33 gpa); eleven members of the women's track team were among 46 Dean's List honorees. In 1991, six student athletes were named GTE Academic All-Americans.

Intramural-Recreational Sports

The Office of Intramural-Recreational Sports provides campus-wide, year-round programs and services to meet the needs of students and their families who wish to participate in sport or leisure time activities. A wide variety of programs are held at the Student Recreation Center, playfields and tennis courts located across campus, Pulliam Hall, and the Lake-on-the-Campus beach and boat dock activity areas.

The Student Recreation Center houses an Olympic-size swimming pool, two indoor tracks, fourteen racquetball/handball courts, two squash courts, a rock climbing practice wall, a weight room, a martial arts room, an indoor tennis court, seven activity areas for basketball, volleyball and badminton play, an equipment check-out

desk, saunas in each locker room, a dance studio and aerobic area, a sports medicine office, and a fitness forum filled with toning and conditioning equipment.

The Office of Intramural-Recreational Sports also provides a broad range of structured programs, including aerobic classes for every skill level and more than 40 intramural competitive events and over thirty sport clubs. The special populations area provides unique entertainment and recreation tailored to specific groups such as re-entry students, international students, disabled students, and the family members of students and eligible users. Instruction is available in a wide variety of activities, including Yoga, massage, weight-training, golf, tennis, and more. In addition, the Adventure Resource Center provides outdoor recreational information and sponsors day and overnight outdoor trips as well as informative clinics on topics such as fishing, hunting, rock-climbing, nature photography, and more. Windsurfing, sailing, and lifeguarding lessons are available courtesy of the Aquatics staff. The Sports Medicine office, operated cooperatively by the Wellness Center and Intramural-Recreational Sports, offers injury rehabilitation, fitness assessments, blood pressure and body fat checks, nutrition analyses, and a supervised workout and exercise program.

Recreational equipment is available for indoor and outdoor use. The equipment check-out counter offers free use of an extensive selection of sports equipment. Base Camp, Intramural-Recreational Sports' outdoor equipment rental program, offers camping, canoeing, hiking, and fishing equipment for a nominal daily fee.

For detailed information concerning the programs and facilities, contact Intramural-Recreational Sports at 536-5531.

Campus Ministries

Campus Ministries at Southern Illinois University at Carbondale, with an awareness of the diverse religious and cultural traditions existing in society, are committed to all efforts unifying the people of God with loving concern for one another. The member ministries see the University as a unique setting for the development of personal growth and commitment in a richly varied environment, providing dialogue and interaction in all aspects of a person's life. They share with the University community in a joint search for truth and an ever deeper meaning in life. Sixteen individual ministries, Jewish and Christian, constitute the Campus Ministries organization. For a current brochure containing more detailed information about their worship, programs, and fellowship offerings, telephone (618) 457-8165 or write Campus Ministries, 816 S. Illinois, Carbondale, IL 62901.

Student Health Programs

The University provides an extensive health benefits plan through the Student Health Program. Student input to the plan is provided through the Student Health Program Advisory Board. Interested students may contact the chair of the Student Health Program Advisory Board, 536-7575.

ELIGIBILITY

Any student who is enrolled at Southern Illinois University at Carbondale and has paid the student medical benefit fees is eligible for services. Dependents of students or staff members of the University are not eligible for Student Health Program benefits.

FEES

The medical benefit fees are assessed each semester and summer session. A student who receives a refund of any portion of the fees is not eligible for the benefits of that

program but would continue to be eligible for benefits of any programs for which the fees have been paid.

AREAS OF SERVICE

The Student Health Program (SHP) offers the following interrelated programs.

On-Campus Outpatient Care. This care or primary care is the same as that offered by private general physicians. The SHP Clinic is staffed by physicians, a psychiatrist, a clinical psychologist, nurse practitioners and registered nurses. The student benefits include routine office care and a wide range of diagnostic tests, including X-ray and Laboratory procedures. The benefit does not cover pharmacy charges. To be seen at the SHP Clinic, call for an appointment, 453-3311.

Dial-A-Nurse. The Dial-A-Nurse program provides an after-hours advisory service during Fall and Spring semesters. The number to call is 536-5585 from 4:30 p.m. - 10:30 p.m. (Monday - Friday) and 2:30 p.m. - 10:30 p.m. Saturday and Sundays.

Counseling Center. A program staffed by professional psychologists trained to help students discover ways to cope with problems in living. The Counseling Center's staff is committed to meeting the special needs of individuals from diverse backgrounds including differences of race, culture, gender, ability and sexual orientation. For more information call 453-5371.

Women's Services. Provides workshops, consultation, resource materials, short term individual counseling, campus safety programming, re-entry services for University women and other programs offering services to women. For information call 453-3655.

SHP Student Dental Services. The SHP Student Dental Services provides dental care to resolve emergency dental disorders. There is a nominal front door fee and there may be additional charges for specialized services. For appointments or information call 536-2421.

Wellness Center. The Wellness Center offers programs and services to help students achieve optimal health and to skillfully administer self-care when ill. Individual and small group counseling, workshops, and seminars in the Student Center, residence halls, and Student Recreation Center, classroom presentations and special programs are offered throughout the year. For information call 536-4441.

LOCATION OF SERVICES

Student Health Programs on-campus services are available at the following locations. The SHP Clinic, X-ray and Laboratory services are located in Beimfohr Hall, Greek Row. Call 453-3311 for appointments. The Pharmacy (453-4417), Wellness Center (536-4441), and administration offices (536-7575) are located at Kesnar Hall, Small Group Housing. The SHP Student Dental Service is located at the College of Applied Sciences and Arts building, Room 25D, 536-2421. The Student Health Assessment Center (453-5238) is located in the Student Center.

Off-campus services for after-hours emergency care are available at Memorial Hospital of Carbondale at 404 West Main Street, 549-0721; and at the Urgent Care Center at the Carbondale Clinic, 2601 West Main Street, 549-5361.

EXTENDED MEDICAL CARE PLAN (STUDENT INSURANCE)

The SMB Extended Care fee is assessed each semester and summer session and funds the insurance benefits listed below.

Emergency Room
Ambulance
Specialty Care
Hospitalization

Outpatient Surgery
Mental Health Care Benefits
Accidental Death and
Dismemberment Benefit

For additional information on benefits please call the Student Medical Benefits Office at 453-4413 and request a copy of the Insurance Benefits Brochure.

MEDICAL FEE REFUND

Students who carry their own medical insurance or are covered under their parents' policy may be eligible for a refund of portions of either or both the Health or Insurance Fees. Students who think they may qualify for a refund may apply no later than the end of the second week of fall and spring semesters or by the end of the first week of the summer session. When applying, students should provide a copy of their insurance policy and insurance identification card to the Student Medical Benefits Office, located in Room 118, Kesnar Hall, Small Group Housing, 453-4413.

CONFIDENTIALITY OF INFORMATION

All visits to any division of the Student Health Programs are confidential. Medical information may be released when authorized by the student. Medical information may also be released without authorization from the student to a court when subpoenaed, to the University legal counsel when the university is being sued and the medical information would be pertinent, and to the public health department as required by law when a student is suffering from a reportable communicable disease. In addition, cases involving firearms and criminal offenses must be reported to the police.

Women's Services

Women's Services is a component of the Counseling Center which is devoted to the support, education, and personal growth of women. Women's Services offers short-term individual counseling, theme-oriented support and training groups, workshops and workshops by request, classroom presentations, and consultation to other University units on matters of concern to women. Among other services provided are information and referral, advocacy, an extensive women's resource file, and a lending library. Women's Services also cosponsors and promotes small and large scale events such as Women's Safety Week and the Take Back the Night march held each fall. A newsletter, *Women in Transition*, keeps University and community women informed of current issues and upcoming events.

Women's Services coordinates the Campus Safety Program. The Campus Safety Program coordinates and promotes efforts to increase women's safety on campus and provides services to women who have been physically or sexually assaulted. Safety related offerings include the Program for Rape Education and Prevention (PREP), self-defense classes, counseling and support for victims of sexual assault, the Brightway Path, and women's night transit.

Women's Services is located on the second floor of Woody Hall in room B244 (453-3655). Services are available to all persons from the University or community who have a concern relevant to women. Men having questions or concerns relating to women's issues are welcome to use Women's Services. No appointment is necessary; walk-ins are always welcome.

University Career Services

From your arrival on campus through graduation, our goal is to assist your quest to shape an education that is both meaningful and marketable. Individual consultation appointments, professional development seminars, career entry tests, on-campus interviews, job listing and referral services, and career fairs are just a sampling of the activities we sponsor to assist you.

Career specialists are available to help you answer your questions surrounding all aspects of career planning, including choosing a major and finding careers that match interests, personality, and values. Staff counselors representing each instructional unit or college assist students and alumni in developing job search skills and strategies as well as introducing you to prospective employers.

Negotiating entry into college, specific majors, graduate school and even some professions can involve the taking of one or more standard tests. As a regional testing center, University Career Services is committed to providing opportunities for you to successfully complete your goals by offering undergraduate/graduate admission, placement, proficiency, and other specialized tests.

Make your career a priority: stop in and visit with us often! University Career Services is located in Woody Hall, B204, 453-2391.

Counseling Center

The Counseling Center provides services to students who want to resolve various personal, developmental, or emotional problems. It is staffed with professional psychologists and counselors who are qualified to help with such concerns as relationship adjustment difficulties, family conflict, sex role awareness development, unusual eating behaviors, managing anger, drug and alcohol abuse, recovering from sexual abuse, social skills development, becoming more assertive, and others. The Counseling Center provides individual, couple, and group counseling, as well as crisis intervention, within an atmosphere of confidentiality and trust. For more information or to set up an initial (intake) appointment call 453-5371, or stop by A302 Woody Hall.

Services to Students with Disabilities

The University maintains a strong commitment to make all services, programs, and activities equally available to students with disabilities. Students who have disabilities are integrated into regular programs and services. Academic support services are provided through the Disability Support Services Office and other departments in order that this student population may obtain the maximum academic, social, and cultural benefits within the University community. Services and programs include pre-admission information, pre-enrollment planning, orientation, transportation, recreational activities, proctoring academic examinations, alternate materials and equipment for visually impaired students, learning disabled, and hearing impaired students, reader recruitment and referral, recruitment and referral of personal attendants, interpreters and notetakers for hearing impaired students, wheelchair repair, special parking, liaison with academic departments and service offices, and liaison with agencies such as Department of Rehabilitation Services.

The campus is quite accessible to students who use wheelchairs, and by those who are semi-ambulatory, visually handicapped, hearing impaired, learning disabled or otherwise disabled. The University Housing Office provides modified housing in the Thompson Point Residential Area and in the family housing areas.

Persons with disabilities apply and are considered for admission in the same manner as non-disabled persons. The nature or severity of disability is not considered in the admission determination. Persons with disabilities interested in attending Southern Illinois University at Carbondale are encouraged to visit the campus in order to

discuss programs and services and to tour the campus. Prospective students who have a disability are also encouraged to formally apply for admission as far in advance as possible to ensure sufficient time for planning support services after being admitted but before the starting date of the semester.

Any further information may be obtained by writing to the Office of Admissions or the Disability Support Services Office (DSS). The DSS may be reached by calling (Area Code 618) 453-5738 (Voice) or 618-453-2293 (TDD).

Office of the University Ombudsman

The Office of the University Ombudsman was established to assist individuals in resolving problems that arise in the University. The office is independent from other offices of the University and reports directly to the president. The office acts on complaints or suggestions from students, faculty, and staff in an attempt to ensure that members of the University community receive fair and equitable treatment within the University system. This includes ensuring that decisions affecting individuals are made promptly and with due process, not only with respect to the adequacy of the procedures used in decision making, but also with respect to the appropriateness of the criteria and rules upon which decisions are based.

The office helps individuals resolve a broad range of problems expeditiously, including academic matters, employment matters, and matters regarding University services. Such assistance may include: advising individuals on steps to take so that their claims may be heard or their questions answered; making referrals to other offices; investigating claims of unfair treatment or erroneous procedures; engaging in mediation to obtain a fair settlement; and assisting in accessing University grievance mechanisms when other methods are unsuccessful. In addition, the ombudsman will intervene in the bureaucratic process on behalf of individuals when such process unnecessarily or unfairly impinges upon them.

The ombudsman office also brings to the attention of those in authority any gaps or inadequacies in existing University procedures that might jeopardize the human rights and civil liberties of members of the University community.

The ombudsman has the authority to access official files as required to fulfill the functions of the office. However, names of persons requesting help cannot be used in the investigation of a case without permission; and all ombudsman records, contacts and communications are kept in the strictest confidence.

The office is located in Woody Hall C302; hours are 8:00 to 4:30, Monday through Friday; and the telephone number is 453-2411.

Clinical Center

The Clinical Center is staffed by professionally trained faculty and by supervised student diagnosticians, therapists, and counselors. It provides diagnostic and treatment services to faculty, staff, University students, and other individuals in the community.

Services include diagnostic assessment of psychological, speech, hearing, reading, and general educational problems. Therapy services encompass various forms of counseling and behavior modification, speech and hearing therapies, physical therapy, and educational remediation.

Alumni Services

Founded in 1896, the Southern Illinois University Alumni Association provides services and support to alumni and students of the university. The Association publishes the quarterly *Alumnus* magazine and sponsors alumni chapters, college alumni societies, reunions, Homecoming activities, and a number of special events throughout the year. Ongoing services to students include externships, opportunities for juniors

and seniors to serve career internships with alumni, and the Student Alumni Council, a registered student organization that links current students with alumni.

International Programs and Services

International Programs and Services is an administrative unit within the Office of International and Economic Development. Programs and services offered by the unit are operated through three divisions: International Students and Scholars, Study Abroad, and International Development.

International Students and Scholars. A comprehensive range of programs and services is provided to international students and the broader community to facilitate educational and cultural exchange by the International Students and Scholars division. These include the areas of immigration and financial services, educative and supportive services, and intercultural community activities.

Immigration and financial services include processing financial clearance for admissions of foreign students, serving as a liaison with foreign governments and sponsoring agencies, and providing certification for foreign currency exchange. Information about sources of financial aid for international students is available. Also, assistance with U.S. immigration regulations, visas, and interpretation of the law pertaining to non-immigrant students and scholars is provided. Forms prescribed for use by the Immigration and Naturalization Service for documenting foreign students and scholars are available here.

Educative and supportive services add a full complement of programs and activities from pre-arrival information for new students to preparation for going home workshops. Within this area are: a monthly newsletter, the *International Dateline*; individual foreign student advisement and counseling; advisement of international student associations and the International Student Council; assistance with initial arrival and settling in; and referrals to community or other campus agencies. The annual International Festival is a major event of interest to the University community.

International Programs and Services works closely with the International Friends Club, a community volunteer organization, on community programs. Eight programs are offered to international students and their families and international visitors for the purpose of intercultural understanding and exchange. The programs include the Hospitality Program, English in Action, Language Exchange, Speakers' Bureau, International Custom Cooking Demonstration, American Cuisine, International Spouses Group, and a Loan Closet. An extension of the Speakers' Bureau is the IN GEAR program, an International Network for Global Educational Activities in Rural Schools, whereby international students are invited to speak in public school classrooms. Information about any of these programs may be obtained from International Programs and Services. International Students and Scholars is located at 910 South Forest. The telephone number is 453-5774.

Study Abroad Programs. The study abroad division coordinates services for American students and faculty, including international grant programs, exchanges, and study abroad programs. It is the central referral point for information on the student and faculty Fulbright programs and on the British Marshall, International Research and Exchange Board (IREX), Belgian-American Educational Association, and Rhodes scholarships. Students may also participate in inter-university international exchange programs, semester abroad programs, and in travel/study programs offered during the summer and intersession periods. Study Abroad Programs is located at 803 South Oakland. The telephone number is 453-7670.

International Development. The International Development division provides University-wide coordination, support, and leadership for a wide variety of developmental activities. These activities include research and dissemination of information on externally funded programs, maintenance of an international resource collection, development of proposals for grants and projects, administration of international agreements, coordination of services for visiting international scholars and delegations, reports, planning statements, and studies on international activities.

Assistance is provided to faculty and staff in the exploration of international linkages, grant or project ideas, identification of external funding sources, proposal development, campus coordination, and follow-up activities. International Development is located at 803 South Oakland. The telephone number is 453-7670.

7 / University Policies



Determination of Residency Status

The following is a direct quotation from the Board of Trustees' Residency Status Policies, which govern the determination of residency status for admission and assessment of student tuition.

For the purpose of these regulations an *adult* is considered to be a student eighteen years of age or over; a *minor* student is a student under eighteen years of age. The term *the State* means the State of Illinois except in the following instances: (1) For the purposes of assessing graduate level student tuition, the Chancellors, with the agreement of the President, may take the term the State to include the Kentucky Counties of Ballard, Caldwell, Calloway, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon, McCracken, Marshall, Trigg, and Union. (2) For purposes of assessing graduate level student tuition for not more than six semester or nine quarter hours, the Chancellors, with the agreement of the President, may take the term the State to include the State of Missouri. Neither exception may apply to the assessment of tuition at the School of Dental Medicine, the School of Law, or the School of Medicine. Except for those exceptions clearly indicated in these regulations, in all cases where records establish that the person does not meet the requirements for resident status as defined in these regulations the nonresident status shall be assigned.

Effective with Spring Semester 1982, the above policy exceptions for Kentucky and Missouri residents were approved for *graduate students only*. Graduate students from Missouri who take more than six semester hours per term will be charged nonresident tuition for *all* semester hours taken during the term.

Residency Determination

Evidence for determination of residence status of each applicant for admission to the University shall be submitted to the Director of Admissions at the time of application for admission. A student may be reclassified at any time by the University upon the basis of additional or changed information. However, if the University has erroneously classified the student as a resident, the change in tuition shall be applicable beginning with the term following the reclassification; if the University has erroneously classified the student as a nonresident, the change in tuition shall be applicable to the term in which the reclassification occurs, provided the student has filed a written request for review in accordance with these regulations. If the University has classified a student as a resident based on false or falsified documents, the reclassification to nonresident status shall be retroactive to the first term during which residency status was based on the false or falsified documents.

Adult Student

An adult, to be considered a resident, must have been a bona fide resident of the State for a period of at least three consecutive months immediately preceding the beginning of any term for which the individual registers at the University, and must continue to maintain a bona fide residence in the State, except that an adult student whose parents (or one of them if only one parent is living or the parents are separated or divorced) have established and are maintaining a bona fide residence in the State and who resides with them (or the one residing in the State) or elsewhere in the State will be regarded as a resident student.

Minor Student

The residence of a minor shall be considered to be, and to change with and follow:

- a. That of the parents, if they are living together, or living parent, if one is dead; or
- b. If the parents are separated or divorced, that of the parent to whom the custody of the person has been awarded by court decree or order, or, in the absence of a court

decree or order, that of the parent with which the person has continuously resided for a period of at least three consecutive months immediately preceding registration at the University; or

c. That of the adoptive parents, if the person has been legally adopted and, in the event the adoptive parents become divorced or separated, that of the adoptive parent whose residence would govern under the foregoing rules if that parent had been a natural parent; or

d. That of the legally appointed guardian of the person; or

e. That of the *natural* guardian, such as a grandparent, adult brother or adult sister, adult uncle or aunt, or other adult relative with whom the person has resided and by whom the student has been supported for a period of at least three consecutive months immediately preceding registration at the University for any term, if the person's parents are dead or have abandoned said person and if no legal guardian of the person has been appointed and qualified.

Parent or Guardian

No parent or legal or natural guardian will be considered a resident of the State unless said person (a) maintains a bona fide and permanent place of abode within the State, and (b) lives, except when temporarily absent from the State with no intention of changing the legal residence to some other State or country, within the State.

Emancipated Minor

If a minor has been emancipated, is completely self-supporting, and actually resides in the State, the minor shall be considered to be a resident even though the parents or guardian may reside outside the State. An emancipated minor who is completely self-supporting shall be considered to actually reside in the State of Illinois if a dwelling place has been maintained within the State uninterruptedly for a period of at least three consecutive months immediately preceding the term registration at the University. Marriage or active military service shall be regarded as effecting the emancipation of minors, whether male or female, for the purposes of this regulation. An emancipated minor whose parents (or one of them if only one parent is living or the parents are separated or divorced) have established and are maintaining a bona fide residence in the State and who resides with them (or the one residing in the State) or elsewhere in the State will be regarded as a resident student.

Married Student

A nonresident student, whether male or female, or a minor or adult, or a citizen or noncitizen of the United States (see below), who is married to a resident of the State, may be classified as a resident so long as the individual continues to reside in the State; however, a spouse through which a student claims residency must demonstrate residency in compliance with the requirements applicable to students seeking resident status.

Persons Without United States Citizenship

A person who is not a citizen of the United States of America who meets and complies with all of the other applicable requirements of these regulations may establish residence status unless the person holds a visa which on its face precludes an intent to reside in the United States.

Armed Forces Personnel

A person who is actively serving in one of the Armed Forces of the United States and who is stationed and present in the State in connection with that service and submits evidence of such service and station, shall be treated as a resident as long as the person remains stationed and present in Illinois. If the spouse or dependent children of such member of the Armed Forces also live in the State, similar treatment shall be granted to them.

A person who is actively serving in one of the Armed Forces of the United States and who is stationed outside the State may be considered a resident only if the individual was a resident of the State at the time of entry into military service, except as otherwise specified by Board policy.

A person who is separated from active military service will be considered a resident of Illinois immediately upon separation providing this person (a) was a resident of the State at the time of enlistment in the military service, (b) became treated as a resident while in the military by attending school at SIU while stationed in the State, or (c) has resided in the State for a period of three months after separation.

State and Federal Penitentiary

A person who is incarcerated in a State or Federal place of detention within the State of Illinois will be treated as a resident for tuition assessment purposes as long as said person remains in that place of detention. If bona fide residence is established in Illinois upon release from detention, the duration of residence shall be deemed to include the prior period of detention.

Minor Children of Parents Transferred Outside the United States

The minor children of persons who have resided in the State for at least three consecutive months immediately prior to a transfer by their employers to some location outside the United States shall be considered residents. However, this shall apply only when the minor children of such parents enroll in the University within five years from the time their parents are transferred by their employer to some location outside the United States.

Dependents of University Employees

The spouses and dependent children of all staff members (academic, administrative, non-academic) on appointment with the University shall be considered as resident students for purposes of tuition assessment.

Contractual Agreements

The Chancellors, with the approval of the President, may enter into agreements with other institutions in or out of state under the terms of which students at the other institutions are defined as residents of the State of Illinois.

Definition of Terminology

To the extent that the terms *bona fide residence*, *independent*, *dependent*, and *emancipation* are not defined in these regulations, definitions shall be determined by according due consideration to all of the facts pertinent and material to the question and to the applicable laws and court decisions of the State of Illinois.

A bona fide residence is a domicile of an individual which is the true, fixed, and permanent home and place of habitation. It is the place to which, whenever absent, the individual has the intention of returning. Criteria to determine this intention include but are not limited to year-around residence, voter registration, place of filing tax returns (home state indicated on federal tax return for purposes of revenue sharing), property ownership, driver's license, car registration, vacations, and employment.

Procedure for Review of Residency Status or Tuition Assessment

A student who takes exception to the residency status assigned or tuition assessed shall pay the tuition assessed but may file a claim in writing to the appropriate official for a reconsideration of residency status and an adjustment of the tuition assessed. The written claim must be filed within 30 school days from the date of assessment of tuition or the date designated in the official University calendar as that upon which instruction begins for the academic period for which the tuition is pay-

able, whichever is later, or the student loses all rights to a change of status and adjustment of the tuition assessed for the term in question. If the student is dissatisfied with the ruling in response to the written claim made within said period, the student may appeal the ruling to the Chancellor or his designee by filing with that official within twenty days of the notice of the ruling a written request.

Immunization Policy

Students who enroll in on-campus courses shall present to the Student Health Programs proof of immunity evidencing the following immunizations, UNLESS they are exempt from doing so as hereinafter provided:

- I. Diphtheria, Tetanus
 - A) Any combination of three or more doses of DPT, DT, or Td vaccine, with the most recent dose having been received within 10 years prior to enrollment.
 - B) The minimum time interval between the first and second dose must have been at least four weeks, with the third dose having been received at least six months after the second or last dose of the basic series.
 - C) Receipt of Tetanus Toxoid (T.T.) vaccine is not acceptable in fulfilling this requirement.
- II. Measles
 - A) Immunization with two live measles virus vaccines on or after the first birthday. If vaccine was received prior to 1968, proof must be provided that a live virus vaccine, without gamma globulin, was administered a minimum of 30 days apart; or
 - B) Laboratory (serologic) evidence of measles immunity; or
 - C) A physician's signed confirmation of disease history and date of conclusive diagnosis.
- III. Rubella
 - A) Immunization with rubella vaccine on or after the first birthday; or
 - B) Laboratory (serologic) evidence of rubella immunity.
 - C) History of disease is not acceptable as proof of immunity.
- IV. Mumps
 - A) Immunization with live mumps vaccine on or after the first birthday; or
 - B) A Physician's signed confirmation of disease history and date of conclusive diagnosis.
 - C) Laboratory (serologic) evidence of mumps is now acceptable as proof of immunity.

Proof of Immunity

- I. Proof of immunity may be provided by a certificate of immunity containing the following information:
 - A) The month, day, and year of vaccine receipt for measles, mumps, and rubella. Whole year dates (e.g. 1980) are acceptable only when it is clear that the student was at least twelve months of age when the vaccine was received.
 - B) The month, day, and year of vaccine receipt for diphtheria and tetanus.
- II. Proof of immunity may also be provided by a copy of the student's Illinois high school health record which complies with the immunization requirements.

Exemptions

I. This policy does not apply to:

- A) persons enrolled at the University prior to Fall Semester 1989;
- B) persons born before January 1, 1957;
- C) persons whose instruction solely involves research, field work or study outside of a classroom environment.

II. Medical Exemption

- A) No proof of immunization shall be required if a physician licensed to practice medicine in all of its branches, certifies that any immunization required herein is medically contraindicated.

III. Religious Exemption

- A) No proof of immunization shall be required if the person or his or her parent(s) or guardian state, in writing, an objection to immunization on religious grounds.

A student to whom this requirement applies who enrolls without providing the required proof of immunity shall be precluded from enrolling in a subsequent term until such time as appropriate documentation is presented to the Student Health Programs or until a medical or religious exemption is granted by the University.

These requirements are drafted in accordance with the College Immunization Code promulgated by the State Department of Public Health. In the event that said Code is changed and conflicts with these requirements, The Code shall be controlling. If students have any questions concerning these requirements, they should contact the Student Health Programs Immunization Office at 453-4454.

Policy on the Release of Student Information and Access to Student Records at Southern Illinois University at Carbondale

I. Purpose

Southern Illinois University at Carbondale, hereinafter referred to as the University, maintains individual records and information about students for the purpose of providing educational, vocational, and personal services to the student. For the purpose of complying with federal regulations regarding the maintenance of confidentiality of student educational records, as required by the Family Educational Rights and Privacy Act of 1974, the following policy has been enacted.

II. Definitions

- A. Student is defined as a person who is or has been enrolled at Southern Illinois University at Carbondale in a course of study either on campus or off campus. Solely for purpose of this policy, any student attending Southern Illinois University at Carbondale will be considered to be an adult and to have sole control over the release of their information except as provided in this policy. The term enrolled is defined as having registered and paid fees into a course of study.
- B. Education records means those records which are directly related to a student, and are maintained by Southern Illinois University at Carbondale or any subunit or by any party acting for Southern Illinois University at Carbondale. The term does *not* include
 - 1. Personal records of instructional, supervisory, and administrative personnel which are not revealed to other individuals.

2. Records of a law enforcement unit of an educational institution which are (a) maintained apart from the education records, (b) maintained solely for law enforcement purposes, and are not disclosed to individuals other than law enforcement officials of the same jurisdiction.

For purposes of this policy, the Southern Illinois University at Carbondale Security Office will be treated as an outside agency and will therefore be required to comply with all regulations relating to the disclosure of information from students' educational records, as set forth in the policy.

3. Employment records, so long as they are maintained separately from any educational record.
 4. Records of a physician, psychologist, or other recognized professional or paraprofessional acting in his or her professional capacity which are used only in connection with treatment and are not disclosed to individuals other than those providing the treatment; Provided that these records can be personally reviewed by a physician or other appropriate professional of the student's choice.
 5. Records which contain only information relating to a person after that person was no longer a student at Southern Illinois University at Carbondale, such as alumni files.
- C. Student Information means any information contained in an educational record as defined in II. B.
- D. Personally identifiable information includes
1. The name of a student, the student's parents, student's spouse, or other family member.
 2. The address of the student.
 3. A personal identifier such as the student's social security number or student number.
 4. A list of personal characteristics which would make the student's identity easily traceable.
 5. Other information that would make the student's identity easily traceable.
- E. Directory information includes
1. Student name.
 2. Student local address and telephone number.
 3. Student home address and telephone number.
 4. Current term hours carried.
 5. Classification (freshman, sophomore, etc.)
 6. Academic unit.
 7. Major.
 8. Date of attendance.
 9. Degrees and honors earned and dates.
 10. The most previous educational agency or institution attended prior to enrollment at Southern Illinois University.
 11. Participation in officially recognized activity or sport.
 12. Weight, height, and pictures of members of athletic teams.
 13. Date of birth.
 14. Picture.

III. Basic Policy Regarding Disclosure of Information from Educational Records

A. Disclosure not requiring prior consent

1. The appropriate recordkeeping office shall obtain the written consent of the student before disclosing personally identifiable information

from the records of a student, except in the case of directory information or disclosures to:

- a. The student themselves.
- b. University personnel who have a legitimate educational need to permit their functioning or research. The sufficiency of the need will be determined by the head of the unit from which the records are sought.

Student information supplied to any Southern Illinois University at Carbondale personnel or unit is provided on the basis that it is needed to permit their necessary functioning. All members of the faculty, administration, and clerical staff must respect confidential information about students they require in the course of their work. They are bound by the conditions outlined in this policy statement relative to the release of student information. All institutional personnel should be alert to refer promptly to the appropriate office requests for transcripts, certifications, or other information which that office typically provides. They should restrict their responses to acknowledging, when appropriate, the receipt of requests for student information germane to their sphere of responsibility.

- c. Officials of other schools or school systems in which the student seeks or intends to enroll, if there is a legitimate need. The sufficiency of the need will be determined by the head of the unit from which the records are sought. A copy of any information sent will be provided to the student upon request.
- d. Faculty or students conducting student characteristic research providing the research project has written approval of the academic unit executive officer sponsoring the research and providing guarantees are made that no personally identifiable information will be published or released.
- e. Certain state and federal representatives specified by law for the sole purpose of the evaluation and auditing of governmentally funded programs in which the University participates, with the guarantee that the identity of the students will be protected.
- f. State and local officials as directed by the State Statute adopted prior to November 19, 1974, as approved by University Legal Counsel.
- g. Organizations conducting studies for, or on behalf of, state or federal educational agencies or institutions for the purpose of developing, validating, or administering predictive tests, administering student aid programs, and improving instruction, with the guarantee that the identity of the student shall be protected.
- h. In connection with financial aid for which the student has applied or received.
- i. Accrediting organizations to carry out their accrediting function, with the guarantee that the identity of the student shall be protected.
- j. Appropriate persons in connection with an emergency, if knowledge of such information is necessary to protect the health or safety of a student or other persons.
- k. Comply with a judicial order or subpoena, but the University should make a reasonable effort to notify the student first. The sufficiency of the order or subpoena will be determined by the University Legal Counsel and that office shall send the required notice to the student.

B. Disclosure Requiring Prior Consent

1. Except as listed in III. A. above, all requests for student information other than directory information must be accompanied by a written consent of the student.
2. The written consent required by this section must be signed and dated by the student giving the consent and shall include (a) a specification of the records to be disclosed, and (b) the party or parties to whom the disclosure may be made.
3. When the disclosure is made pursuant to this section, the appropriate recordkeeping office shall, upon request, provide a copy of the records which are disclosed to the student.
4. Student information will not be released to parents of students without the student's permission.

C. Disclosure of Directory Information

Directory information pertaining to students may be released by the University at any time provided that it publish the definition at least once each academic year in the campus student newspaper or other designated publication with wide circulation, and the individual student is given a reasonable period of time to inform the University in writing, through Admissions and Records, that they do not wish such information about themselves be released without their prior consent. Admissions and Records will be responsible for identifying or deleting all information which the student desires not to be released outside the University and for informing all University recipients of that information that such information is not to be released. The student must request deletion of information each year.

The procedural requirements of this section do not apply to the disclosure of directory information from the educational records of an individual who is no longer in attendance at the University. Thus, the University (or appropriate recordkeeping office) is not required to give public notice of the above to former students.

All recipients of student information will be bound by this policy. Lists of student information are never knowingly provided to any requesting party for a commercial or political purpose. If a student directory is published, it shall be equally available to all.

D. Records of Disclosure Made

Records of disclosure are not required to be kept in the record of a student when the disclosure is initiated by the student themselves.

The University may disclose personally identifiable information from the education records of a student only on the condition that the party to whom the disclosure is made will not further disclose the information without the student's written consent, except in the case of disclosure of directory information.

The University shall, except for the disclosure of directory information, inform the party to whom disclosure is made of the obligation to receive the student's consent before further disclosure to other parties.

E. Waiver of Right to Inspect and Review Education Records

1. The student may waive their right to inspect and review education records. The waiver, in order to be valid, must be in writing and signed by the student. The University (or each appropriate recordkeeping office) may not require a waiver of rights but it may request such a waiver.
2. If a student has waived their right to see confidential letters of recommendation placed in their record after January 1, 1975, the waiver will be effective only if (a) the applicant or student is, upon request,

notified of the names of all individuals providing the letters or statements; (b) the letters or statements are used only for the purpose for which they were originally intended, and (c) such waiver is not required by the University as a condition of admission to or receipt of any other service or benefit from the University.

3. A waiver may be revoked, but the revocation must be in writing and signed by the student. Revocation of waiver will affect only documents received after its execution.

IV. Identification and Description of Student Information

A. Academic Records

Admissions and Records retains the official academic record of a student. It is a cumulative history of a student's admission, registration, and academic participation and performance. Certain biographic and demographic information is also kept for identification for enrollment and research-related purposes. For information concerning these records contact the director of Admissions and Records.

Academic records may also be maintained in academic units, departments, and divisions. For information concerning these records contact the head of the academic unit, department, or division in question. Institutional Research and Studies also maintains some academic records.

B. Financial Records

Offices within the Business area maintain certain financial records which relate to payment and accounting of tuition, fees, and other charges. They also maintain records which record student loans and grants. For information concerning these records, contact the Bursar's Office.

For billing purposes, Admissions and Records maintains a record of financial aid received and tuition and fees paid. For information concerning these records, contact the director of Admissions and Records.

Financial Aid maintains records of student receiving loans, grants, and aid along with scholarship information and some academic information. It also maintains records pertinent to student employment including the family financial statement. For information concerning these records, contact the director of Financial Aid.

Housing maintains records of housing accounts. For information concerning these records, contact the director of Housing.

C. Medical/Counseling/Clinical Center Records

The Health Service Clinic maintains medical records of students who have required medical assistance through Student Health Programs. Only information pertinent to the health of the individual is contained therein. For information concerning these records, contact either the director of Student Health Programs or the medical chief of staff of the Health Service Clinic.

The Counseling Center maintains records pertinent to services rendered by that office. For information concerning these records, contact the coordinator of the Counseling Center.

The Clinical Center maintains records pertinent to services rendered by that office. For information concerning these records, contact the director of the Clinical Center.

D. Disciplinary Records

Student Affairs maintains records of disciplinary action which has been taken against a student with documentation pertaining thereto. That office also maintains only the academic information necessary to permit its functioning. For information concerning these records, contact the dean of students.

E. Placement Records

The University Placement Center creates a record for those persons who wish to avail themselves of its services, with student's voluntary participation. This information is distributed to potential employers. It consists of self-completed resumes and various personal references. For information concerning these records, contact the director of the University Career Services.

V. Access to Records**A. Right to Inspect or Review Educational Records**

1. The student has the right to physically review their records in the presence of a designated University representative.
2. Requests for review may be required to be submitted in writing to the appropriate office.
3. That office shall comply with the request within a reasonable time, but in any case, compliance shall be no more than thirty (30) days after the receipt of the request.
4. Where necessary, interpretation of the record shall be provided by qualified University personnel.
5. Original records cannot be removed from University premises. A copy will be provided if requested, but only if not providing a copy would preclude review of the educational records by the student.
6. Copies of transcripts from other educational institutions will be provided only if the original source of those transcripts is no longer available or going to the original source would cause undue hardship as determined by this University.

B. Limitations on Right to Inspect or Review

1. The student may not inspect the following records:
 - a. Financial records and statements of their parents.
 - b. Confidential letters or materials placed in records before January 1, 1975 so long as they were solicited with an understanding of confidentiality and are used only for the purpose for which they were written.
 - c. Confidential letters of recommendation and confidential statements of recommendation placed in the education records of the student after January 1, 1975, are subject to the student's right to inspect and review unless the student has signed a written waiver.
2. Reports that involve two or more persons may be censored to protect the identity of the other person(s).

C. Administrative Hold on University Records

On occasion it is necessary for a University to place an administrative hold on a student's ability to request a transcript, to register for a subsequent term, to reenter the University after a period of attendance interruption, or to be officially graduated.

In cases where an administrative hold has been placed on a student's record, the student may view such records but will not be able to obtain a copy of said record until the administrative hold is removed through the appropriate University channels.

VI. Challenging Contents of a Student's Educational Record**A. Purpose**

A student has the right to challenge the content of a record on the ground that they believe it is inaccurate, misleading, or otherwise in violation of their privacy or other rights and to have inserted in the record their written explanation of its contents. Academic grade review procedures are

covered in the University Catalog and/or such particular academic unit, department or division and not by this policy.

B. Procedure

To initiate such a challenge, the student shall, within sixty (60) days after they have inspected and reviewed the record in question for the first time, file with the University office responsible for maintaining such record a written request for correction, on a form specified by the University. Within thirty (30) days following receipt of such request, the head of such office, or their representative, shall review the record in question with the student and either order the correction or deletion of such alleged inaccurate, misleading, or otherwise inappropriate data as specified in the request or notify the student of the right to a hearing at which the student and other persons directly involved in the establishment of the record shall have an opportunity to present evidence to support or refute the contention that the data specified in the request are inaccurate, misleading, or otherwise inappropriate.

C. Hearing

The student shall be given written notice sent to their last known address of the time and place of such hearing not less than ten (10) days in advance. The hearing will be conducted by a University representative who does not have a direct interest in the outcome. The student might well challenge the hearing officer. Any disagreement regarding the hearing officer will be resolved by the appropriate Vice President.

The student shall have the right to attend the hearing, to be advised by an individual of their choice at their own expense, including an attorney, and to call witnesses in their behalf. The student shall be notified in writing of the decision within ten (10) days following the hearing or within five (5) days of a decision without a hearing. Such decision is final. The decision reached shall be based solely upon the evidence presented at the hearing and shall include a summary of the evidence and reasons for the decision.

(Note: A hearing may not be requested by a student to contest the assignment of a grade; however, a hearing may be requested to contest whether or not the assigned grade was recorded accurately in the education records of the student.)

VII. Destruction of Records

The University may destroy education records when they are no longer necessary, with the following limitations:

1. Education records may not be destroyed if there is an outstanding request to inspect and review them.
2. Explanations placed in the record by the student and the record of disclosure of information must be maintained as long as the education record to which it pertains is maintained.

VIII. Right to File Complaints

- A. If the student thinks his or her rights have been violated, he or she should first file a complaint with the head of the office which maintains the records in question.
- B. After exhausting all the internal remedies available within the University, if the student still thinks his or her rights have been violated, written complaints can be filed with

The Family Educational Rights and Privacy Act Office
Department of Education
330 Independence Avenue S.W.

Washington, D.C. 20201

The office shall notify the complainant and the University of the receipt of the complaint and an investigation will follow.

Policy Accommodating Religious Observances of Students

Admissions/Registration

The University's admissions process provides ample opportunity for admission and registration activities without conflicting with religious holidays and observances. However, students may receive another appointment when an appointment for admission counseling, or an appointment for academic advisement, or an appointment for registration for classes falls on a date or at a time that would conflict with the student's observances of major religious holidays. The individual student must notify in writing the appropriate admissions officer or academic adviser of the conflict with the student's observance of the religious holiday. That notification shall be made immediately after the student's receipt of the appointment or at least five (5) work days prior to the appointment time, whichever is later.

Class Attendance

Students absent from classes because of observances of major religious holidays will be excused. Students *must notify the instructor at least three regular class periods in advance of an absence from class for a religious holiday* and must take the responsibility for making up work missed.

Examinations

Instructors are requested not to schedule class examinations on dates that would conflict with major religious holidays. In the event an examination must be scheduled on a date that conflicts with a student's required observance of a religious holiday, the student should be given reasonable opportunity to make up the examination. It is the student's responsibility to notify the instructor of the class when the examination will be missed. That notification must occur at least three regular class meeting periods in advance of the absence or at the time the announcement of the examination is made, whichever is later.

Grievance Procedure

A student who believes that he or she has been unreasonably denied an educational benefit due to his or her religious belief or practices may petition in writing as follows:

Cases involving class attendance or class examinations that are unresolved at the class instructor level may be appealed by the student by filing a petition in writing, within thirty calendar days of the incident being appealed, to the chair or coordinator of the department or program in which the course is offered. In the event the case is not resolved to the student's satisfaction at the department/program level within five (5) working days after the chair's receipt of the petition, the student may petition in writing to the dean of the school or college to which that teaching department or program reports. The student's petition to the school or college level must be filed with the dean within five (5) working days of the decision at the department level. Should the case not be resolved to the student's satisfaction at the school or college level within five (5) working days of the petition filing at that level, the student may

petition the Vice President for Academic Affairs. If the student is still not satisfied at that level within the five working day time period, he or she may petition to the Chancellor within another five working days. Decisions of the Chancellor may be appealed to the President, and to the Board of Trustees if necessary, in accordance with Bylaws of the Board of Trustees.

In cases involving admissions, *the grievance process should follow the time frames described above*, with the initial petition being filed with the Director of Admissions and Records, which is the only filing point prior to the Vice Chancellor for Academic Affairs.

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